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GLEANNINGS

A JOURNAL DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

BEE CULTURE

ILLUSTRATED
SEMI-MONTHLY
Published by THE A. I. ROOT CO.
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No. 2.



DOOLITTLE has painted that picture of a bee-cellar to the life, p. 17. I never thought before to see how many bees would fly out in a given time. To-day, Jan. 5, I went down cellar. Air sweet—45°; listened by the watch full five minutes — not a bee flew. Different story two months later. Five bees fly out then to one now.

IN REPLY to friend Crane's question, p. 13, I'm afraid *Tilia petiolaris* is only two weeks later than the European linden. Yet if no later than the American, why should the British make so much fuss over it? Surely they ought to be familiar with any superiority the American may have, and it can be had at low prices compared with the new comer.

A BEE-KEEPER writes that the T tins made by The A. I. Root Co. are too weak, and asks where he can get the old-fashioned kind. I told him I felt sure he could get the kind desired by so ordering from Medina. [Our T tins are made heavier than formerly; but if our friend were to order ordinary stock he would probably get just what he desires.—ED.]

I'VE BEEN LOOKING through the latest A B C. What a misnomer is the name! To be sure, it gives the abc's; but it doesn't stop there, and goes right on up through the fifth and sixth reader. I'm afraid beginners hardly realize what a treasure they have in such a work. How much it would have been worth to me when I began working with bees, and how many wrong moves it would have saved me, it is hard to estimate.

IN REPLY to that question, p. 6, it does seem remarkable that sweet clover grows everywhere and yields everywhere. The only exception, I think, on record is that of Mrs. Harrison, who couldn't get it to grow in Florida. Just possibly, if she should accidentally drop some seed there where it was not wanted it might make a luxuriant growth. [That is just it. If Mrs. Harrison could just accidentally drop some seed where it was not wanted it would surely grow.—ED.]

W. WINTERTON says in the *British Bee Journal* that, in Root's A B C, *Symphoricarpos racemosus* is called "Snowdrop," no doubt in error for "Snowberry." Our British friend will hardly accuse the A B C of error if he will remember that, while botanical names are the same the world over, popular names are not always the same in two different countries. In the United States tongue, "Snowdrop" is the correct popular name.

MR. EDITOR, I don't see that I can get up any quarrel with your political platform, p. 6. Whenever you can get enough to stand with you—and the current seems to be setting that way — the day of doom has come for the saloon. [Yes, the current is setting that way very rapidly. The time will soon come when politicians will have to dance to the music of the churches rather than to the music of the saloons. The saloon has had, and even now has, a strong "political pull" on our legislators; but as sure as there is to be a millennium, just so sure the day of better things will come; and then only good clean men can get into office.—ED.]

MR. EDITOR, you say, p. 20, that when bees quiet down in cellar after a fire has been started, no one can state definitely how much of the trouble was due to cold and how much to foul air. Quite right. But I'll tell you one case in which you can tell definitely. Temperature in cellar 50°; same outdoors. Bees noisy. Fire started toward evening, running temperature to 60°. Next morning bees still, with thermometer 50° inside and out. Foul air had all to do with it in that case. [That is a clear case; and the fact being established in *this* case, it will be reasonable to assume that in the other cases foul air is equally the disturbing cause.—ED.]

FORMERLY I kept my bees in two cellars, with the belief that the fewer bees the purer the air. I've changed my practice for the past few winters, and am shaky as to my former belief. I now cram all the bees into one room of my house-cellar—less trouble to watch, and so many bees keep it warm enough so fire is not often needed. The warmer cellar makes better ventilation. [In a cold locality like that of Marengo, I am rather of the opinion that a large number of colonies in the cellar is more conducive to good results than a

small number; but in the vicinity of Medina, where we have so much open winter (like spring to-day, Jan. 6), and the weather outside is even warmer than the atmosphere of the cellar, then a small number of colonies will give a better result.—ED.]

WHILE READING about the trouble with hive-covers in Colorado I wondered if my tin covers with dead-air space wouldn't fit their case. Two years' trial of fifty of them makes me like them. [But even in Colorado there is a trouble about the tin-covered hive-tops. It is the *warping* and *twisting* of the boards, and not the possible leaking while in the rain. Why, it is very seldom that there is any rain at all in Colorado. If a cover could be made all of metal, or of some other material, which the sun's rays could not affect, then we should have the *ne plus ultra* for Colorado, providing, or course, that such a cover would not be too expensive.—ED.]

FRIEND A. I., you say, p. 20, that you didn't raise John's wages *because* he had never used tobacco. Likely not; but you can say to those boys that there are cases where a boy gets less *because* he uses tobacco; and in any case, the amount spent on tobacco is just so much of a slice constantly taken off his wages. Just let him figure up how much it will amount to by the time he is 50 or 60 years old if he puts out at interest the sum paid out each year for tobacco, and it may open his eyes. [My tobacco money has all gone into life insurance, and I now have a \$5000 life-insurance policy *paid up*, and which in ten years more, if I live, without another payment will be worth nearly \$9000.—ED.]

JUST A BIT humiliating, Mr. Editor, after your kind words, p. 20, to own up that I've had no sub-ventilator in use for a few winters. I had doubts as to the *quality* of the air that entered; and when the sub-ventilator got clogged up I didn't open it again. But I'm just as strong a believer as ever in a cellar fire, whenever it's too cold, and sometimes I want the fire for ventilation only. [Verily, the last prop is knocked out from under the sub-earth ventilator. Dr. Miller, for the last few years, has been the only consistent and persistent advocate of this device for wintering bees; and now that he—even *he*—has abandoned its use, we may as well relegate it to the fads of the past. It promised much, but accomplished little. *Requiescat in pace*. I suppose now I'll have to obliterate all reference to the sub-earth ventilator from the next edition of the A B C.—ED.]

IT IS ENCOURAGING to note that a number of bee-keepers are beginning to be on the lookout for improvement in bees. If every bee-keeper would breed only from his best, both queens and drones, a general improvement would soon be manifest. And while effort is made in that direction, the probability is that the greatest improvement will come here and there from some sport, as it is called—some colony that specially distinguishes itself from its fellows with no apparent reason for the distinction. So it becomes us all to be on the alert,

for there's no telling who may be the fortunate one. [That \$100 offer has certainly started the tide for better queens. When breeders will pay anywhere from \$10 to \$15 for a good queen, and think nothing of it; and when perhaps they would give \$25 for something extraordinary, the strife will be, not for beauty nor golden-yellow bands, but for business. We have five or six queens in our apiary now for which we would not take \$25 apiece.—ED.]

J. E. CRANE says his $5 \times 4\frac{1}{4} \times 1\frac{1}{4}$ plain sections not perfectly filled averaged $14\frac{1}{2}$ oz. I had a few hundred that seemed pretty well filled, and they weighed 13.82 oz. Next year mine may be heavier than his. They don't look like "great slabs of honey" as much as you might think, Mr. Editor, and I'm rather sorry to say they're nice-looking. [I am inclined to think that there is going to be a future for the $5 \times 4\frac{1}{4} \times 1\frac{1}{4}$ plain section. The tendency now seems to be toward a large comb surface, shallow cells, and very near full-pound weights. There can be nothing dishonest in this; and if the comb honey itself is beautiful, the more of it we can see the better. If honey in shallow cells ripens better (understand I do not claim that it does), then combs with large surfaces are the ones to produce. But the $5 \times 4 \times 1\frac{1}{4}$ does not *quite* make 1 lb., on the average. If there are those who want the full pound, then the same section, $1\frac{3}{8}$ instead of $1\frac{1}{4}$, is the one to select. In some markets, I imagine, there would be a demand for *guaranteed full pound* sections; and the $5 \times 4\frac{1}{4} \times 1\frac{3}{8}$ would give us just about 16 ounces.—ED.]

RAMBLER'S wild dream about the automobile, p. 15, may not be all a dream. The one item of hauling bees without having any horses around would be a big thing. After all these years I haven't become so hardened to it that I don't breathe a bit easier each fall and spring when the hauling is over. [It is quite within the range of the present day, and not in the very distant future either, that automobiles will be used for hauling honey to the home apiaries. I myself have been using the horseless wagon (the bicycle) for toting hives and hive parts down to our out-apiary. Why did I use it? Because I have had some expensive experience with horses at an out-yard. As you may remember I lost one—a horse for which I paid \$125, and on the day of his death (a month or so after) I was offered \$175. He died while hitched at one of our out-yards. It is supposed that a bee stung him, for he broke the shaft diagonally in two, and in some unaccountable way pushed the sharp end clear through his heart. On that day my enthusiasm for horse flesh suffered a collapse; and had it not been for the loss of that animal, and the possible profit of \$50, I *might* have been a "hoss jockey" to-day. But, joking aside, in this issue Rambler speaks about the difficulty of getting honey from the mountain fastnesses of California. Some time the day will come when horseless carriages will haul stuff up and down those almost inaccessible mountains at a comparatively slight expense.—ED.]



Now snow, now blow, now raw, now thaw;
Now hail, now shine, now sleet;
And so the bees one day 'most freeze—
The next, have summer heat.

AMERICAN BEE JOURNAL.

A very thorough index goes with the last issue for 1899.

Hon. Eugene Secor has received a can of honey from Athens, the honey itself having been gathered on classic Mt. Hymettus.

C. Davenport says a distance of only a mile may make a great difference in the rotting of hives. He considers it a good plan to soak the boards in strong lime water.

"Old Grimes" says where a location is subject to winds, and even if it is not, a wind-break should be provided. Cold winds are disastrous to an apiary in early spring.

Hasty well says: "What an appetite for camels most of us have! Our government abolished the national cock-fight the minute it got to Manila, and introduced—the American saloon!"

Here is a short history of the Old Reliable: Founded by Samuel Wagner in 1861. He died Feb. 17, 1872. His son conducted it till Jan. 1, 1873, when Rev. W. F. Clarke secured control of it and took it to Washington. In 1874 T. G. Newman took hold and conducted it till June 1, 1892, when Mr. York took control.

At the Utah convention Mr. Hone said he had cured pickled brood by using salt and sulphur. He thinks the dairy business is detrimental to bee-keeping, as cattle eat sweet clover and other flowering plants off the land. Mr. Schach said he had cured pickled brood by a free use of dry slacked lime and salt, scattering all through the hive. He said it cleansed and purified the bees, and kept down disease. Sec'y Fagg said that twice this season he had caught the bees killing their old queen, and concluded that the subject of requeening could be left to the bees.

In speaking of birds as enemies of bees, H. L. Jones, of Australia, says:

The green oriole has, however, the honor of being the greatest gourmand in this line that I have yet encountered, and its capacity for stowing away bees and stings is simply marvelous. To secure its prey it sometimes settles on a hive and catches the bees as they fly home; at other times it darts from some convenient perch and takes the bee on the wing; but its most favorite plan is to locate itself in a fruit-tree, and either snatch up a bee as it alights on a blossom, or as it flies from flower to flower. In one of these little friends that I shot and made a post-mortem examination upon, I found 15 stings in the stomach, sticking into the lining of it, just like pins in a pin-cushion, some of them being very firmly implanted and imbedded almost up to the head. Another bird had no fewer than 27 stings imbedded in its alimentary canal,

and also one sting with its poison-sac attached sticking loosely in its throat at the base of the tongue.

Mr. Jones finds the magpie a great bee-eater, but dislikes to kill so valuable a bird. The martin is a nuisance to the bee-keeper, but is easily killed on account of their habit of perching on a line all together, thus making a fine mark for a boy with a shotgun.

BRITISH BEE JOURNAL.

The issue for Dec. 28 starts out with an editorial tinged with deep sadness. England is engaged in a bloody struggle in South Africa, and so far has met with dreadful reverses. It is no place here to state just what is right, for no man on earth can do it; but the following extract is a good indication of the painful suspense in the hearts of our British neighbors. It reminds us of the dark days of 1862 in this country:

The closing days of the year and of the nineteenth century are, for the people of this kingdom, shadowed by clouds which, though soon to roll away—as clouds always do—and be succeeded by sunshine, are still overhead as we write. It is with some sadness that we wonder what becomes of the *British Bee Journals* sent regularly every week to South Africa, where there is at present, unfortunately, no peace, and where a word of sympathy in these closing lines of our twenty-seventh volume will have but small chance of reaching those subscribers whose "Homes of the Honey-bee" are, or were, located where war is now raging. Let us hope, too, that the end is not far distant, and that the final outcome of the terrible struggle now going on will be the securing of equal rights for all white men in that part of the world, and a full measure of justice for our darker brethren in South Africa.

Here is an account of what is probably the oldest honey-comb in the world. The story, which seems to be entirely accurate, was in a Cambridge paper:

There is in the possession of Mr. W. Drake, of Broad street, Cambridge, a curiosity of great antiquity in the shape of a perfect honey-comb in the center of what was once an oak-tree, which, according to naturalists who have viewed it, is hundreds of years old; in fact, it is impossible to say what age the comb and tree may not be. The tree was raised on land in the occupation of Mr. Gale Cornell, of Brick-Kiln Farm, Bottisham Lodge. It had been known to be imbedded in the fen land for a long period, and when 6 ft. of peat had been taken off the surface, it was decided that the tree, which is of the species known as bog-oak, should be raised. It was found to be no less than 100 ft. long, and the men were in the act of splitting the tree into logs when, in the center of it, they came upon a honey-comb, which, with the oak, had been imbedded in the peat. The comb was in a perfect state of preservation, and dotted about it and lying at the base of the aperture were bees.

"Peat ages" are nothing modern, after all. It would be interesting to know when bees were first seen in England.

A picture of an old-fashioned apiary is given, consisting of five straw hives, owned by a Mrs. Booth. The apiary was started by her great-grandfather over 150 years ago, and has been run ever since without interruption, always on the female side. Talk about "simplicity" and Excelsior covers! This good lady uses old earthenware pannings, too much broken to be of use; old bottomless metal coal-scuttles supplemented by worn-out straw skeps, broken tiles, a box on edge, old sacks, rusty dripping-tins, pudding-pans, etc. It is good that an occasional relic of this kind has been preserved.

GENERAL CORRESPONDENCE

RAMBLE 181.

California; its Vast Honey Resources from which 300 Cars are sent in one good Season; where the Honey is Produced, and what Kind.

BY RAMBLER.

With the rains that have fallen so bountifully upon our charming western country there is a marked revival of the hopes of our bee-keepers; and this hopeful influence must be exerting an influence upon the fraternity in the far East; for letters are dropping down upon us making all sorts of inquiries about this country, and just as though we had never had a drouth.

It was naturally supposable that Cuba and the other islands that have been thrown open to the enterprise of our people would be the magnet to draw bee-keepers into new and untried fields; but it seems that, in spite of new domains and our dry seasons, California still

dred carloads, and in addition to this a large home consumption, perhaps we are justified in our boast for largest production, and may be further pardoned if we sail our hats a little when we reflect upon the long trains of honey that are leaving our State. But this exuberance is all the result of a good season, and we have to use this qualifying term, for we have our poor as well as good seasons. During the nine years I have been in Southern California, four of them have been total failures in honey production, while two others have been a partial success, leaving three good years in nine. Therefore, taking the average production during these nine years I have come to the conclusion that in a series of years California will make no better showing than some of the Eastern States. There is not much comfort in that for those who wish to come here to embark in the bee business; but let us look at the map of California, and make a few comparisons, review a little of the past, look at the present, and deal a little in futures.

For nearly 800 miles the western side of California is white with the spray of the Pacific Ocean. Measure off 800 miles on the Atlantic side of the continent, and it would include all the coast from Maine to Georgia. In area it equals the ten far Eastern States, as

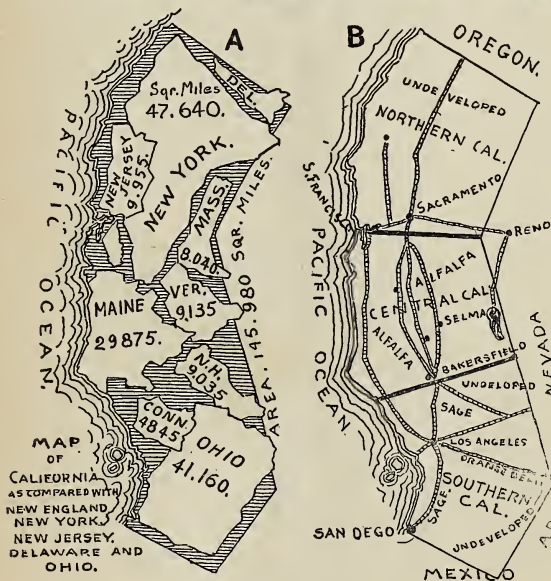
shown in the accompanying cut. Thus far the honey production in this vast area has been confined to a few favored localities, and there are wide stretches of country where a bee could not live; but the prospects are bright for these desert places becoming our most reliable honey districts.

The history of the bee industry in California is decidedly interesting, and shows many marked changes in the area of production; and those changes so favorably begun will go along with rapid strides. That the seeker for a good honey location in this State may know just where to look, refer again to the maps. I have divided the State into three parts—Northern, Central, and Southern.

The production of honey in California commenced in the Sacramento Valley, in the northern portion of the State. As the resources of the State became more generally known it was found that the southern end was far the best for honey, both in

quality and quantity, and in that portion the industry has reached its greatest development, and the honey produced in the seven southernmost counties will ever hold the reputation gained for quality; for in no portion of the State is there the amount of various sages that are found here; and while the valleys have been put under cultivation, and the sages destroyed, the canyons and mountain sides are still its home, and there will always be very good pasturage, for the land can be used for no other purpose.

It is in this portion of the State where those phenomenally large yields have been produced;



has a magnetic influence; and as the aspects in the honey business are rapidly changing in this State it is no more than fair that we devote a little time and space to it.

I believe the boast has been made that California produces the largest honey crop of any State in the Union. I believe I have made some such remarks in the past myself.

We can estimate quite closely, perhaps better than almost any other State, as to the annual product. Our honey is shipped over a few transportation lines, and all we have to do is to look into the books of said lines; and when the grand total figures up to three hun-

but we can refer to them only as phenomenal, for they seldom occur twice in the same locality. These phenomenal yields have always been within the sage-belt, and from that source; and it is safe to say that, in the production of quantities of pure sage honey, California has seen its best days—but not its best days in the production of honey, mind you.

Referring to the little map of comparisons, we find that California has a population of a little over a million, while the Eastern States of the same area have sixteen millions. It is a foregone conclusion that the waste places in California will rapidly fill up with people, bringing changes in the products of the soil, and more of a diversity in the honey resources and in the quality of the honey.

That the honey resources of California are changing, and will increase to greater proportions than ever, can be easily demonstrated in Central California. In this portion of the State, where a few years ago the land was so barren that, upon hundreds of square miles, a bee could not live, there are now thriving farms and thousands of acres of alfalfa. Irrigation has made this great change. This area of alfalfa is now confined in a great measure to locations not at a great distance from the railroads. Outside of this area are thousands of square miles yet to be populated and brought under cultivation, and it is safe to say that alfalfa will be one of the principal crops.

We never hear of phenomenally large yields of honey in Central California, but they are blessed with something better—no total failures. The honey yield fluctuates more or less, as it does in all locations; but there is a reasonably sure income from the apiary every year; and the carloads of honey from Central California, which are already numerous, will steadily increase. In the eastern portion of the middle of the State we find Owens River Valley, not of great size. It is hemmed in by immense mountains, and here the bee-keeper produces alfalfa honey of the finest quality. Owing to location, or some other cause, the honey is of lighter shade than honey from the same source in other portions of the State.

The development of the honey resources in Northern California has not kept up with the development in the south. It is a mountainous country; and in those portions where honey can be produced, the cost of transportation to market eats too much into the profits to make it a paying business at the present prices of honey. It is safe to say that there is an area in Northern California equal to the area of New York State where there is not a carload of honey shipped; and where it is produced it is sold in the limited home market. It costs as much to ship honey from the Oregon line to San Francisco (a little over 300 miles) as it does from San Francisco to New York. There is a future, however, for Northern California honey production. With more and competing lines of transportation, more settlement of the waste places, and more alfalfa, carloads will begin to move out. Many of our prominent bee-keepers, even in Southern California, see in alfalfa the great and permanent honey-plant of the future.

This great forage plant is in direct accord with the interests of every agricultural community. Alfalfa first, cattle next, then the flowing of milk and honey, typical of the highest prosperity of a State.

California is justly noted for its immense fruit industry, and much has been said about this source of honey. However, it cuts but a small figure. The time of bloom is of short duration, and the secretion of honey not abundant. The orange-bloom, where the trees are abundant, gives a fair surplus; but it would not pay for the bee-keeper to depend wholly upon that source alone for his living.

At present the best locations for success in honey production in California are found all the way from the Sacramento Valley to San Diego; and the bee-keeper who intends to move to this State should write to the Chambers of Commerce in San Francisco and Los Angeles for literature giving much information about the respective ends of the State. In fact, it would be a good plan for almost anybody who would like to know more of the resources of this great State to send for this literature.

Then it would be a good plan for the emigrant, when he arrives, to take time to look the ground over. Ride by rail and wheel through the central portion of the State. The largest alfalfa districts are between Fresno and Bakersfield. Two weeks' time could be profitably spent in looking this field over, and a longer time could be spent in Southern California; for you can see, by referring to the map, that the great State of Ohio covers only about half of this end of California.

When a location is selected it is of the utmost importance that the occupant of it make up his mind to like his new home, and laud it to the skies upon any and all occasion. That is always the first duty of all true Californians.

I am sorry to know that some people are always cursing their lot and their surroundings. Well, we want no such people here. Their somber souls would be sadly out of place in this God-given land of health and sunshine; and wherever a number of such people congregate, there you will find a dead town and a well-filled graveyard.

In thinking over the matter of a change of residence, do not hesitate on account of health or old age, for this is a healthful climate, and, as Dr. Gallup has it, "It is the old man's paradise."

Taking it all in all, the bee-keeping industry of California has a brilliant future; and all the present members of the fraternity have to do is to stick to the business and hasten the day of great prosperity.

[This article from one who has rambled so extensively over the State, and who has studied its problems and resources so carefully, is, I think, the fairest and most comprehensive we have ever received. As we get so many inquiries from health-seekers and others who desire to change their bee-pasturages for something better, we have decided to make this into a pamphlet or leaflet, entitled, "California as a Honey Country," by John H. Martin. Price 2 cts. postpaid.—ED.]

HOME-MADE BICYCLE FOOT-POWER BUZZ-SAW.

How to Build it; Something for Boys who have Nothing to Do.

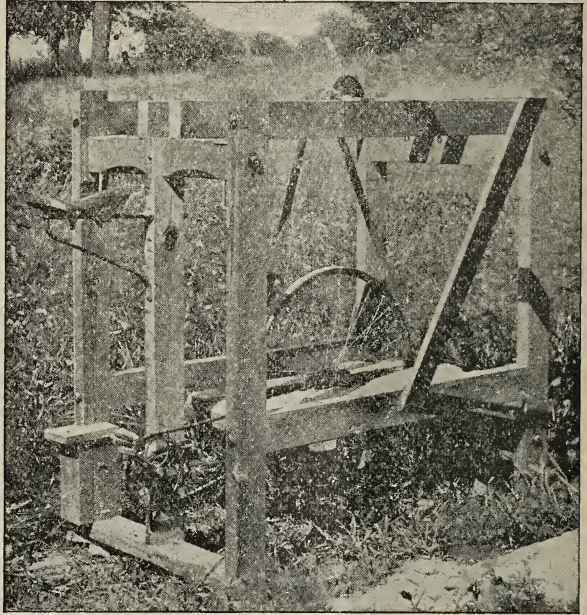
BY C. H. PIERCE.

I inclose two snap-shots of my foot-power saw that I made early last spring, and have used this season. A glance at the two pictures will give a general idea of how it is made. It is the easiest-running foot-power saw I have ever tried. The saw revolves about 3500 times per minute. I use it and the parallel gauges. In cutting off I have to pedal backward; but to a man used to the motion of a bicycle, that is nothing. In ripping I change my saw and pedal forward, drawing all my stuff toward me with a stick with a short sharp brad in it. The boards, being all short, are just as easy to handle, and all dust is thrown from the operator. The fly (or belt) wheel is the rear wheel to a bicycle, and in place of the tire it has about 7 lbs. of lead run into the hollow rim to give the wheel weight.

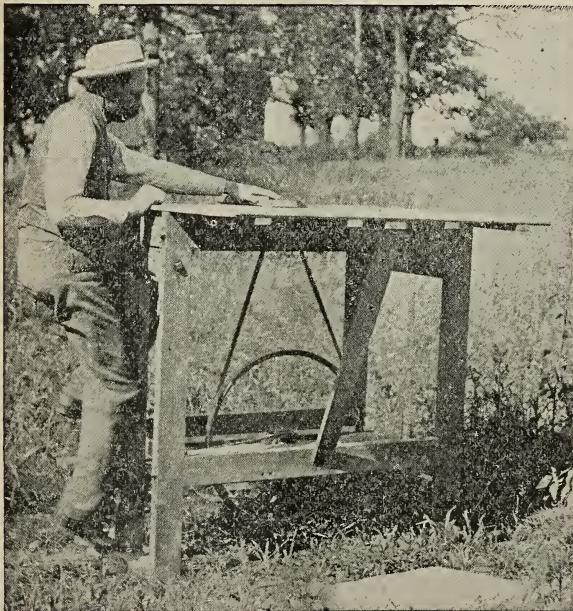
Any one used to wheeling can sit in the saddle and work this machine with perfect ease. It would be just the thing for A. I. R. to keep his muscle up with

this winter while waiting for the roads to open next spring.

Last week I sawed up and made 60 bodies, 20 covers, and 20 bottom-boards, and worked through only the middle of the day, while it was warm. In cutting up long boards I have



PIERCE'S BICYCLE BUZZ-SAW.



BICYCLE BUZZ-SAW IN OPERATION.

a man hold up the far end of the board.

A. I. R. being such a wanderer, I would suggest he make his plans now for a trip next summer to Kilbourn City, the famed Dells of the Wisconsin, the home of the writer of this article. The latch-string hangs out, Mr. Root, and you will be shown some scenery the beauty of which you never dreamed of.

C. H. PIERCE.

Kilbourn, Wis.

[There are plenty of old cast-off out-of-date bicycles that can be bought for a mere song, that have seen their best days for the work for which they were made, but which would do as well for this purpose as the most up-to-date machine made. The illustrations, together with the description, make the whole so plain that any mechanic, or one handy with tools, can make a foot-power buzz-saw that will equal the best there is made. I personally tried this velocipede foot-power, as it is called, in my younger days, and know that it

is very effective, and easy to run. That this no dead-center-crank movement is the best means of getting power from the legs is proven by the fact that it has supplanted all other mechanisms for bicycles, and is now the *only* movement.

Even if one buys most of his hive-fixtures he will find this machine very handy for a great variety of purposes, and it is just the season of the year to build it, when the weather outside will be too cold or bad to do any thing else.

If you enjoy this kind of work as I did once, you will get "just piles of fun out of it" as well as real profit. I sometimes wish I were free to go back to those old days now. Besides the pleasure derived, the experience gained in "making things" has been worth much to me in after-years; for now I am better able to understand mechanical constructions and possibilities, and I would not give up what I then learned in the *loft of that dear old barn*, where I spent many a happy hour alone with my tools, for half what I got out of my college days. Possibly if it had not been for these attractions and my mother's watchful eye I should have found pleasure on the streets, and then—I dare not think.—ED.]

A VISIT TO A CUBAN APIARY.

The Horse that Was Named "Coggshall" after Coggshall the Bee-keeper.

BY HARRY HOWE.

Senor Ernesto Aguilera, The A. I. Root Co.'s representative here, asked me to go with him to see one of his apiaries one day. When we started the party consisted of Senor Aguilera, Senor Smidt, the apiarist from another of Aguilera's apiaries; Fred Craycraft, who acted as interpreter, and myself. We had a very pleasant drive of fifteen miles or so over one of the splendid stone roads to a small village, where we turned off on to a dirt road as poor as the other was good. It was two or three miles back to the apiary. At one place the road was several feet below the level of the fields for quite a way. This, they said, was because the water which ran in the road, when it rained, had cut it down. The mud-holes which still remained attested the truth of the statement.

One of the insane asylums of the city of Havana is out on this road, but I saw it only at a distance. The apiary is located across the tracks from a railroad station, in plain sight of the passengers. There is a water-tank here which looks like a huge iron cup with a flaring rim.

This station is Aguarda del Cura. I have seen many fine apiaries in the course of my rambles, but never one to equal this. There are 250 colonies, all in new ten-frame Dovetailed hives. These are arranged in four quadrangles, with the hives all facing in, or away from the broad paths from which they are worked. The space inside the quadrangles is set to bananas, while many noble old trees furnish the indispensable shade.

There is also a row of bananas all the way around the apiary. The apiarist, Senor Prado, evidently has an eye for beauty as well as Senor Aguilera, for he had a garden at one side of the honey-house, in which are growing not only fine vegetables, but various ornamental plants, while a row of sunflowers added the suggestion of the North, which was needed to complete the picture. The hives are placed rather close together on timbers, about a foot above the ground. The hives are painted in about as many tints and shades of about as many colors as one can imagine. I did not ask how it happened, but it looked as though some color-blind painter had bought a job lot of small cans of paint, and then commenced on the first one he came to, and used it half up; then as fast as the can got low he poured in some from some other color. Or it may be it was done on purpose to help the bees find their way home. The general effect was rather pleasing, as it was set off by the deep red of the soil and the rich green of the tropical foliage.

Of course I asked questions, lots of them; in fact, I have a list which I fire at every bee-keeper I meet here.

The same old eight vs. ten-frame controversy holds good here as well as in the States, so my question as to why one size is used is sure to set up an argument. The bees in this apiary are on the average a pretty good lot of Italians. At one side of this apiary is a drinking-trough for the bees. It is a shallow trough, cut into a big block of porous stone, into which water drips from a barrel. What overflows from the trough soaks down the side of the block, and the bees seem to like to get it here better than on top.

The whole apiary is a garden. There was scarcely a spear of grass except where it was wanted. Senor A. says he expects soon to have a flag-pole on which will be a string of flags—the Cuban flag, the United States flag, the flag of the apiary, and a streamer with "The A. I. Root Co." on it. He raises considerable comb honey, so in the honey-house were stacks of Danzy sections and cases, fence separators, and all the rest of it. This house has a wide porch on two sides, a tile roof, a good hard-wood floor, and all of the kinks to delight the heart of the bee enthusiast, except the arrangements for extracting. Perhaps I am just a little cracked on the subject, but it looks to me like a waste of valuable energy to have the extractor set up on a platform four feet high, and then lift all the combs of honey up there. I prefer to lift the honey after it is extracted if it must be lifted at all. Then the capping arrangements were seven or eight feet from the extractor instead of "right handy."

It is almost impossible to get photographs of the apiaries here, if they are not in sheds, owing to the bananas, etc., which shut off the views.

In the case of this apiary, the day I was there was cloudy and windy—not very good for either snap-shots or time exposure. On the way back I noticed that the horse seemed to have a rather queer name; and after I began to notice it, it seemed some way familiar, so I

asked Senor A. about it. It turned out to be "Coggshall," with a Spanish pronunciation. It surprised me very much to find a horse with such a name until Senor A. explained that the horse had grown into the habit of kicking the cover off from things, then all was clear; for I knew that GLEANINGS circulates in Cuba.

San Francisco de Paula, Cuba.

[Mr. Howe sent us a photo of the Aguilera apiary; but, owing to the difficulties mentioned in the letter above, the picture was not clear enough to be reproduced by half-tone. I regret this very much, as the view if clear enough would be very interesting, and we hereby request Mr. Aguilera to have another attempt made; and while he is about it, let us have a snap-shot of the horse "Coggshall" that has a fashion of "kicking covers off from things."—Ed.]

DISTRACTET HONEY.

BY LOUIS SCHERFF.

You ask if mine pees dis summer did vell?
Ef I got me considible much new honey?
You bed your shlibbers. An' I dit sell
It all to dem cidy folk fur shot gash money.
It was distractet honey, an' arful nice,
Because mine pees dey hat to gadder it dwice.

How dis habbend, I will now to you exblain.
Alldough mine vife would give a good deal money
Ef she coult rup out uf her life de arful stain
Dat she says I poot on her, dough t'vos very funny.
She has nefer forgif me quite to dis day,
Dough I haf dried to please her in efry way.

You see, las year from a pee subbly manafacter
I pought me some alsike I indendet to grow,
An' also vot dey call'd a battend honey-distractor
Vot dey use to distract out de honey flow.
Vell, dis year I got a pooty fairly goot crop,
I distractet almost a parrel full to de top.



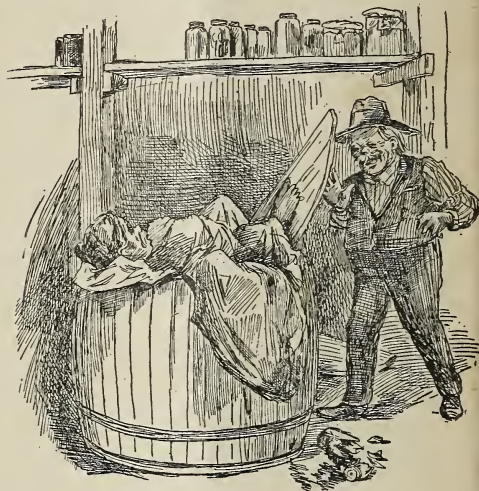
"SHE HAS NEFER FORGIF ME!"

De nex ding vos to fine a goot blase,
So I garried it indoo mine upgrout cellar.
As mine vife vos away for a couple of days
I indendet, ven she got back, to dell her
If she vent in dare she shoul't look a liddle out;
Dot de lit on dat parrel vas not fery shtout.

(You see, mine vife she is of pooty goot size;
An' for bossin' me roun' she's a reg'lar hummer.
Dot she vears de breeches, her neighbors surmise;
But I generally vears 'em in de summer.
Her nature is goot, dough, ven she is not mat;
But ven somding goes wrong, den her demper is bat).

Out in dot cellar, high up near under de joice,
In a blace dot her burpose an fancy dit suit,
A shelf hat been pud dare by von of de boys.
Where she kept all of her nice cannert fruit;
So high vos de shelf dat, unless you vould shtand
On somding, you couldn't reach back mit your handt.

Von hot day, vile gettin dinner herself,
To de cellar she shtarted, in her bare feet
To git a can o' fruit from de shelf,
Besides a few odder goot dings to eat.
An' just because she didn't haf no shair.
She clum up on to dot parrel vot shood dare.



"BESIDES, SHE WAS JAWIN'."

Dare came a crash, an' den she vent down
Into dot parrel, clean up to her hip,
Vile ofer it hung her skirt an' gown,
Yust in de right blase to catch all de drip.
Her hips vos wetchen in dot parrel so tight
She couldn't turn'd her limbs roun, left nor right.

De schildren, addracted by de noise of dare maw,
Straitway out in dot cellar now shtruck;
She doid em to run quick an get dare paw,
An dell 'em to hurry up, dot she vos shtruck.
Ven I got to de cellar an' saw dot sight
I lafft so hard dot mine eyes actuly crite.

You see, I didn't realize (dough it looket so funny)
Dot she vos in such an arful bad plight;
An' dot dare vos danger of her shp'illin' dot honey;
Besides, she vos jawin' me mit all her might,
An' said dot I hat almost ruined her for lile,
Dot I cared more for pees dan I dit for my vife.

I dried to console her in farious vays
(At de same time I blanned how to safe dot honey).
"If you'd a got drownd," I said, "durin' dog days,
How I'd had been sad hat I lost mine sweet bonny."
But she almost shtarted a reg'lar quarrel
Mit me before I got her out of dot parrel.

Ven I dit git her out, I sat her in a vash-dup
(I coult handle her, for her outside gown vos glean).
Den mit a large sheet I coffered her up,
So dot noddin at all of her coult be seen;
An' I told her, if she would now only befafe,
Efry bit of dot honey I den coult safe.

We carried her outdoors, under de drees
(A neighbor helpt me to bring her out up).
Right in front of all dose hifes of pees
We blaced her, sittin' in dot vash-dup.
Den mit four poles an' four sheets I vent
An' inclos'd her around, like a circus tent.

I says, "Mardy, if you will now only tarry
A couble of hours I'll gif you half of der money
If you will let dose pees come in an' carry
Back to de hife of of you all dot honey.
Dell me, Mardy, vill you holt shstill?"
She lookt at me satly an' said, "I vill."

Dee pees soon fount dot honey, an' carried it home.
 Dot dup an' tent vos mit 'em fairly a life.
 It kept me fillin' de subers mit emby comb,
 So fast dit dey carry it off of mine vife.
 By half-bast dree dey hat her so glean.
 Dot no pee or drop of honey on her vos seen.

Den I askt her to gif us some egspanation
 How it felt, an' if dose pees causet her bain.
 She said, "It vos a very ticklish sensation."
 But she wouldn't like to dry it ober again.
 Efen som of de neighbors hat herd of her condition,
 An' came to see de circus, an' askt for admission.

De honey in de parrel, ve tought, mite be soiled,
 So ve brought it out too, to haf it vorket ofer.
 Dot vay ve vould be sure it vouldn't git spoiled.
 Soon de pees vent for it vorse as for vite clofer,
 But it dook 'em a bart yet of de nex' day
 Before dey hat it alltogedder carried away.



"EFEN SOME OF DER NEIGHBORS HAD HEAROT OF
 HER CONDITION."

It vos der most beautiful honey vot efer you seen
 After I got true distractin' it for de second dime,
 Such helayt color, an' so nice an' glean.
 I put it all in glass jars an' markt it "Prime."
 I sold it in town at almost double brice.
 Because, 't vos der only honey pees gadderder dwice.

MORAL.

Dough abbarent de loss, dare is always some gain
 If you just keep sthilla an' use your brain.

the matter I will explain how I arrived at the size of the brood-chamber which I have used successfully for nearly 30 years.

When I first began to keep bees the old bee-keepers about me kept them in hives containing from 2000 to 2500 cubic inches, so I started out with a hive which gave nearly 2600 cubic inches in the body of the hive, or about 2150 cubic inches inside the brood-frames, which were 12 in number, of the Gallup size of the Langstroth frame, the size of which was $11\frac{1}{4} \times 11\frac{1}{4}$ outside measure. I soon found, however, that, as a rule, three of the 12 frames would be filled with nice white honey early in the season, and generally nearly all of these three frames of white nice honey would remain in the hives all during the next spring, often till the honey harvest arrived, very little if any of it being consumed, unless we chanced to have a poor season. After a little thought on the subject I concluded to place three blanks or division-boards in the place of three frames, two on one end of the hive and one on the other. To this end I nailed top-bars to frames on pieces of one-inch boards, which were cut so as to be $\frac{3}{8}$ inch short at the bottom, and $\frac{1}{8}$ at either side, and simply hung these on the rabbets the same as the frames always hung. I had previously found that my average queens would occupy only about 800 square inches of comb with brood, which left about 600 square inches of comb to be filled with honey and pollen, as my hive of about 2150 cubic inches gave me about 1400 square inches of comb, surface measure. Thus each year I was losing the use of from 20 to 30 lbs. of the choicest honey for the sake of insuring the bees with an abundance of honey should a poor season occur. This honey, when placed in sections, was worth not far from \$5.00 at that time, while, if necessary to feed to secure sufficient stores during an occasional poor year, on account of a smaller brood-chamber, \$2.00 worth of sugar, properly made into a syrup, would provide them the necessary feed to carry them through.

I tried about ten colonies with the three boards in place of the three combs, the first year, thinking it best not to go contrary to the veterans, on a large scale at first, fearing that they might be right after all. However, I was more than gratified to find that I had not only obtained the 25 pounds in the sections, but that these ten colonies averaged over 40 pounds more comb honey than those which had their usual 12 combs. I began casting about to know why this should be so, for I had no expectation that I should receive more in the boxes than what was naturally placed in the frames whose places were taken by the boards. The reason soon became obvious why this was so. As the queen kept the nine frames nearly filled with brood, when the honey harvest came, the bees had nowhere to put the honey which they gathered, except in the section boxes, so they immediately commenced work in them. With the 12 frames of comb they had more or less empty comb, which was already built, in which to store their honey; and as bees always store honey in any empty comb available about the brood-nest before



SIZE OF BROOD-CHAMBERS.

Question.—I am about beginning in bee-keeping, and wish to make my hives during these winter months when I have little else to do. Will you please tell us through the columns of GLEANINGS just what the size of the brood-chamber should be? I see by the different bee-papers which I have been enabled to read, through the courtesy of a friend, that there is a difference of opinion along this line.

Answer.—Yes, indeed, there is a difference of opinion regarding the size of brood-chambers—especially so when working for comb honey; and as I suppose the questioner desires to know something of the particulars in

they commence to build new comb, they were loath to enter the sections after a start at storing had been commenced in the empty comb below.

Another thing pleased me much, which was this: I found, as cold weather approached in the fall, that the bees placed their fall or dark honey in the brood-chamber, as the queen decreased laying preparatory for winter; and that, as a rule, the ten colonies had enough honey for winter and to carry them over till nectar was secreted the following spring; namely, 25 pounds; and as this was not so salable as the white honey, while it was just as good for the winter food for the bees, I had made a great gain here also.

The next year I placed boards in many more of my hives with like success, and the year after found me with all of my hives having only *nine* frames in them. Having fully established in my own mind the size of the brood-chamber (as nine Gallup frames) to my satisfaction, where working an apiary where swarms could be attended to, I found that, unless I used the boards and made hives expecting to so use them, I should not have room enough at the top for all of the surplus room necessary to use to the best advantage. This set me to thinking of side boxes in connection with top boxes, and I soon brought out the plan of side and top boxes combined, which I often gave to the public, as found in the back volumes of the different bee-papers. These hives gave me better results still than any before obtained, and with hives containing only nine Gallup frames I secured an average yield during 1877 of over 200 lbs. of comb honey from each old colony in the spring. But as these side and top box hives required considerably more attention than others, and did not prove so good at wintering as chaff hives, I soon brought out what is known as the "lateral plan" of working, in opposition to the "tiering-up" plan. This plan proved equally good with the top and side box plan, and had the advantage of requiring less manipulation and also of allowing the hives to remain chaff packed throughout the whole season, the chaff packing having its advantage in giving a more uniform temperature in the summer as well as in the winter. And thus I have kept on with the 9 Gallup frames during nearly 30 years; and upon looking up the matter lately, and comparing all of my yields in honey during the past 30 years as regards hives used, etc., and adding the whole together, and dividing by the 30 years, I find that the average yield during those 30 years has been very nearly 80 pounds of comb honey each year, covering the whole period, for each old colony in the spring, worked for comb honey. And I am still using only nine Gallup frames, except at the out-apiary, and in experimenting along the line of non-swarmer, having found that, where non-swarmer is to become at all perfect, a hive as large as the ten-frame Langstroth must be used. But as I am not far enough advanced toward perfection as yet on these non-swarmer lines to give the matter to the public, I will not enter further into this subject at this time.



THE REFORMED SPELLINGS; THE EDITORIAL BLUE PENCIL.

Dear Mr. Root:—Referring to mine of Nov. 10, and your reply as it appeared in GLEANINGS for Dec. 1, I court space in your next (or subsequent) issue; but I did not expect a verbatim account previously; you might have used the blue pencil on my 10th ult. letter to some advantage. You say that I am the seventh person who has objected to the reformed spelling. I extend my hearty congratulations to the minority who have the courage of their convictions, and who are opposed to tinkering with the English orthography. I wish GLEANINGS ten times its present circulation; but if its policy is to experiment with an outside issue, and one of such paramount importance, an increased subscription list will in my judgment be harder to secure under the so-called "reformed plan" than if you decide to adhere to the efficient manner in which it is now managed. Unfortunately, the majority of men who keep bees are men not endowed with an academic education; and to fasten upon this class of men some fad is an injustice to say the least. Let some of the periodicals dally along the distorted mud road of tinkered spelling; but there are thousands of persons who prefer the macadam road they were taught in *schools* to travel. Be consistent. I quote "Webster went as far as we propose going." "He eliminated *u* from *favour*, and adopted other *shorter spellings*." "The change proposed by us would hardly be noticed." If you say that Webster adopted *shorter spellings*, and you propose to journey that far, how in the world will it *not* be noticed? I quote, "Your position would leave no chance for progress." Well! if there is to be any progress in this direction, pray let it emanate from our public schools and colleges. "We should have regard for the rising generation." Every true-born American has; and if you regard his or her feelings, don't commence at the top of the ladder to teach such an intricate question. Answering your irrelevant remark about foreigners, I will say that my regard for them is extremely limited. Many of them who are dumped upon our shores are illiterate, and would not know a bee-journal from a bale of hay.

I think I made my letter of a personal nature, and you published it without my consent. I would not have "talked for publication," with so much apparent spleen. I make a most abject apology if I offended you, because some time ago I forwarded a communication about foul brood to you "for publication," and you did not publish same. I then accused you as not being "able to look over the borders of your Buckeye eyeglasses," and your dictated answer displayed evidence of a gentleman. A few words more.

You admonish your subscribers by declaring that there will be no need of a kick for not

attending the primaries for delegates to be elected to the "tinkering convention." Wait and see. "A threat of this kind is," etc. No threat, my boy; simply an expression of a humble subscriber. Notwithstanding the one hundred who are willing for a change, I still adhere to the minority, and think that the sentiments of the practical bee-man are unalterably opposed to any modification of the English orthography. One of the strongest objections to the so-called reformed spelling is the obliteration thereby of many of the distinctive marks of derivation, many of which indicate at once the source whence we derive some of our modern English words.

GEORGE N. WANSER.

Rahway, N. J., Dec. 8.

[You did not offend me; and even if you did, your apology displays "evidence of a gentleman." But when I get a letter about something that has appeared in GLEANINGS, and nothing said about its being a private note, I take it that I can use it for publication.

Yes, I might have used the blue pencil, but when one differs from me I find if I don't let that one use his exact language that I am liable to be accused of cowardice. So I prefer to take my chastisements just as the writer pens them.

As to the real matter at issue, you are referred to an editorial in this issue which I think will make the antis more free to express themselves.—ED.]

TALL SECTIONS; ARGUMENTS FOR AND AGAINST THEM.

In these days of advancement in other things I am pleased to see that apiculture is not one whit behind the times. I think the Dove-tailed hive is far ahead of the Simplicity, and the Hoffman frames equally superior to the old unspaced. There are many other changes equally for the better, but I think there is no doubt that many articles are brought to notice that are no improvement; and while some are advocating the tall section, I desire to speak a word in favor of the one in general use. Is it not a fact that the general tendency of the times is to have every thing prepared so it will sell regardless of what the consumer may get out of it? I do not say I am free from it; but ought we not to consider oftener how our customer will be benefited? If it is a fact that the tall section will sell better than the square one, is it not because the one who purchases it *thinks* he is getting more honey for his money? It is surely not in as good shape to place on the table, and there is where we all like to have it look well.

Now, if I change to the tall section, and it sells better, my brother bee-keeper will be compelled to do the same in order to compete, and after we have *all* made the change at an extra expense, what have we gained? Have we any reason to believe there will be any more honey consumed? The square section is just the right size to take the place of the L. frame in the upper story, which enables us to run for either extracted or comb honey, simply by putting in either section-holders or

frames. This is a great advantage, I think, as I produce both kinds, and can supply a customer according to the size of his pocket-book.

J. T. VANPETTEN.

[This matter of preference for tall sections is not wholly one of a better price, for there are several other important considerations.

1. It is not the sections that look best on the *table*, but that which presents the best appearance in the *market*. A house with square windows and square doors would not look as well as one with tall ones. Tin fruit-cans, packages of starch, coffee, and all kinds of groceries, are taller than broad. Tall sections simply conform to the proportions of other articles offered for sale, and with which we are familiar.

2. A 4×5 section for approximately a pound weight permits of the use of a *thinner* comb—a comb more nearly approaching store combs in nature when bees are left to their own sweet wills. Thin combs are more liable to be better filled and sooner filled; and, what is of considerable importance, there will be fewer uncapped cells. Thin combs having shallow cells, it is argued, will permit of the honey being ripened sooner; and if this is true, it may account for the quicker and better filling of the combs.

3. R. C. Aikin, one of the brightest bee-keepers we have, lays down the rule that "*in comb-building the downward progress exceeds the sidewise in a proportion of about 3 to 2,*" and then he adds, "If, then, comb-construction goes on in this way, a section that is as wide as deep will be finished down the center before it is at the outer edges. This will be made plain by looking at combs in all stages of progress." A tall section, then, more nearly conforms to the natural instincts of bees in comb-building than a square one.

4. A greater number of tall sections holding approximately a pound can be accommodated in a given super.

5. A tall section will stand shipping better than a square one, in proportion as it is taller. Take, for example, the 4×5 and the 4¼×4¼. The former can have 9½ inches of perpendicular attachment, and the latter 8 inches. Then the square comb has a wider comb to be held by those perpendicular edges.

There are other minor advantages, but these are the principal ones; but from what I have offered you can see that the rising popularity of the tall section is not due *wholly* to the commercial argument.—ED.]

A SEVERE TEST FOR EXTRA-THIN WEED FOUNDATION; TALL SECTIONS, AND DOES IT PAY TO CHANGE?

Let me state, for the benefit of *those* who are against tall sections, and who claim that foundation will not stay in them, that I filled 200 Danz. supers of 4×5 Danz. sections with full sheets of extra-thin Weed foundation, and fastened only at the top of the section, leaving ¼ inch space at bottom, and a small space at the sides of foundation. These I moved about 34 miles to bean-fields; and, it being an exceptionally cool year, only a small portion

were filled. Over 100 supers of sections of foundation were moved back, making about 68 miles hauling, and handled 4 times in loading and unloading, and not a dozen sheets of foundation fell out, and *these* were not properly fastened into sections, or there would not have been any to fall out. Now, then, this extra-thin foundation is bound to swing from side to side in moving with a wagon over a few miles of the way on very rough roads, and yet they were in as good condition as when they left the apiary, excepting these few sheets that came entirely loose and whole from the wood. This is surely a good test.

It is a mistake to work against this improvement. Experience with the unprejudiced will prove them good.

It rained in the northern part of the State on the 22d, and may reach us in a few days; but they have considerably more rain in the north than down here. Near the coast the country has a beautiful shade of green, and is gradually becoming so away from the coast.

M. H. MENDLESON.

Ventura, Cal., Dec. 25, 1899.

[M. H. Mendleson is, perhaps, the most extensive bee-keeper in California, and perhaps in all the West. He is a strong advocate of extra-thin foundation and tall 4x5 sections. Mr. Mendleson is also the man who hauls *whole* apiaries in a single load over the mountains in California, and who does things on a big scale; and this reminds me of a statement recently made by the editor of the *Review*, that he who would make a specialty of bee-keeping, and make that almost his exclusive business, should manage bees on a large scale.—ED.]

DOES THE QUEEN MEET THE DRONE THE SECOND TIME?

On page 882 Prof. C. F. Hodge states, in relation to the nuptial flight of a queen, that within 15 minutes after the bees had removed the organs of the drone she flew again, and in five minutes returned with a second trophy of success. Now, as I always have supposed that a queen flew but once for the purpose of mating, this is news to me, and no doubt will be to a number of beginners. Will you please give us your views on the subject?

JOHN F. HENNESSY.

Ballston Spa, N. Y., Dec. 11.

[I noticed the passage to which you refer in Prof. Hodge's article, and intended to call particular attention to it; but I see I overlooked it. The language is susceptible of two or three interpretations. One is, that Prof. Hodge believes that queens may meet the drone more than once—before and *after* egg-laying; second, that they may be fertilized two or more times *before* actual egg-laying begins, but not after; or, third, what is more probably true, the bees, on the return of the young queen, in their efforts to remove the *outside* appendages, took out all the organs of the drone, thus making the first flight of the queen fruitless, rendering a second one necessary. I have seen virgin queens go around with the appendages more or less shriveled up

in the form of little strings, for a day or two; but the bees always chase after, and probably do in time succeed in pulling them away.

It is generally laid down in the text-books, and the statement seems to be supported by facts, that a queen meets a drone but once in her lifetime; and although there has been some evidence that seemed to indicate that queens might meet a drone a second time, all such reports have been discredited. Perhaps Prof. Hodge, now that the question is opened up, will be enabled to enlighten us a little further on these points.

An observatory hive is worth all the books that have ever been published on the subject; but the only trouble is, it takes more watching than most people are willing to give.

A strong fact against the theory that the queen meets the drone a second time is that there has been no absolute proof to the effect that the progeny of any one queen changes from black to Italian or *vice versa*. The first bees hatched by the queen will be like all the rest reared from that mother, no matter whether she lives to be three months old or three years. It is true, there have been reports that the progeny of one queen changed all their markings, but so far as I can remember there have been too many chances for error on the part of the observer.—ED.]

MATING OF QUEEN AND DRONE, AS SEEN BY ANOTHER EYE-WITNESS.

Having just read what you say on page 97 of your A B C book about the mating of queens in the air, including the communications of Messrs. E. A. Pratt and S. R. Fletcher, I am prompted to report the following: In the spring and summer of 1884 I had an apiary near Wayland, Stephens Co., Texas, on the top of one of those precipitous elevations that are there called mountains, and to this apiary I gave daily personal attention. During the swarming season there might be two or even three swarms in the air at once. This kept me much of the time on the lookout. One day while standing on the outer edge of the apiary I heard a buzzing noise overhead, and, looking up, I saw a queen and a drone that had evidently just embraced and then separated, and were now circling in the air, each in its own way, but connected with each other by a long white filament that was being drawn out longer and longer till it was not several feet only, but several yards, in length. When this gossamer-like thread became too attenuated to stand the strain it parted, and I lost sight of both the queen and drone while they were still up in the air. I did not consider the matter worth reporting, not knowing then that such observations have rarely occurred, or at least have rarely been published; hence this report is like one born out of due time, but so the apostle Paul said he was.

R. A. COLE, M. D.

Jackson, Ind. Ter., Nov. 10.

THE CUBAN BEE-KEEPERS' ASSOCIATION.

For a long time there had been talk of the need of a bee-association in Cuba. This finally

took the form of a call for the bee-keepers of Cuba to meet at the office of Dr. James Warner, in Havana, for the purpose of forming a society of bee-keepers. At the appointed time the meeting was called to order, and a constitution adopted. The officers elected were: President, Dr. James Warner; Vice-pres., Senor Pedro Casanova; Secretary, Harry Howe; Treasurer, Senor Juan Ranelo.

The president then gave a list of persons proposed for honorary membership. It was unanimously adopted. They are: Frank Benton, O. O. Poppleton, E. R. Root, W. Z. Hutchinson, H. E. Hill, G. W. York.

The secretary read the proposed foul-brood law, and a resolution was adopted asking for its passage.

Sec. IX. is of interest especially. It reads, "The inspector of apiaries shall examine all bees imported into Cuba; and any bees or apiarian appliances found to be contaminated with foul brood shall be immediately destroyed, without compensation to the owner. The inspector of customs shall notify the inspector of apiaries of all shipments of bees received."

This paragraph gave rise to considerable discussion, but seems to cover the ground as well as can be expected.

The purpose of the association, as stated in its constitution, is to advance the interests of Cuban bee-keepers, and that at present means fighting foul brood. HARRY HOWE.

HOW TO DRY OUT SQUARE CANS; BEER-BOTTLES FOR HONEY.

I have a plan for drying honey-cans, that I have never seen in print; and as it is very effective, it may be of value to some one who has not thought of it. After washing the can, I turn it down in such a way as to cause all of the water to drain down in the corner by the mouth of the can, and after sufficient time has elapsed for the water to drain down in the corner, put a small sponge in and press it down with the fingers. It will absorb the water, when it can be pulled out, squeezed, and used again. I have sometimes used a small rag, but the sponge is better. If properly done, there will not be enough water left in the can to make it rust.

In putting up honey (extracted) to be sold by the grocer I find second-hand beer-bottles to be the cheapest and most convenient package I can get, the cost being about 20 cents per dozen. There is an old darkey in this town who makes a business of collecting old bottles. With a little wagon and an old mule he goes about crying, "Old bottles and flas'es!" He gives the little children, from whom he gets nearly all his bottles, a stick of candy or a tea-cake for each bottle, and I take his beer-bottles at 20 cents per dozen. J. M. CUTTS.

Montgomery, Ala., Nov. 13.

WET-SHEET PACK FOR A SEVERE BEE-STING, AND HOW IT WORKS.

I want to say a word of comfort to those who suffer from severe itching, resembling hives, all over after being stung by bees, especially in warm weather. My daughter, aged 12, was stung by a bee last summer, and in half an

hour her body was as red as it could be, and swelled up in blotches and lumps of all sizes, and she was in such agony that she cried out aloud. My wife got a sheet, wrung it out of cold water fresh from the well, and spread it upon a bed, and, after taking off all of the child's clothes, she laid her upon it and covered the ends of the sheet over her and patted them down very closely. She then covered her up with a lot of quilts. In fifteen minutes she was asleep, and slept over an hour. When she awoke she felt quite well, and the perspiration was flowing freely. After wiping herself carefully with a soft towel, she dressed, and felt as well as ever. EDW. SMITH.

Carpenter, Ill.

GETTING BASSWOOD SEEDS TO GERMINATE.

I have had some practice in nursery work, and have been very successful in germinating seeds that many have failed in. The most difficult, I think, I have found, have been the "canna," or, as often called, "Indian shot-plant," and well named, because the seed is as hard as a shot. The treatment with which I have had the most success has been by taking the seed and putting a lot in a tea-cup or bowl, and pouring over them scalding water. The water must be exceedingly hot. Let them be until the water is cool, and repeat the operation several times. I have found instances when I would have to do it for a full day. After they have been scalded several times I take the seeds out in my hand, and look very closely at the outer shell of the seed, and find a ragged tear, or crack, in the outside covering of it. Those that crack in this way I plant, and in a few weeks I have them growing.

As basswood seed is hard, and of a like nature, I do not see but that, were it treated in this manner, it ought to germinate in a month or so in the house, in winter, or outside in the spring. F. L. REHN.

Collingdale, Pa.

A GOOD REPORT.

While reading of the unfavorable reports as to the honey crop from the east, west, north, and south, I have no cause of complaint to report from my little pleasure-ground of 55 stocks. During the season I extracted 8884 lbs., besides, at a rough estimate, 1500 lbs. surplus in hives, for new swarms next spring. Average net price realized, 5 $\frac{3}{4}$ cts. per lb., cans, freight, etc., deducted. While I keep bees more for recreation than for profit, still I usually succeed in combining the two. My best season in California was 1892. From 54 colonies, spring count, I extracted 22,397 lbs.; increase to 72. Clear profit besides increase, \$786. My disastrous year was when I extracted 840 lbs., and had my apiary decrease from 145 good colonies to 54 poor ones.

D. E. STRATTON, M. D.

Chinese Camp, Cal., Dec. 6.

[This it should be said in all fairness is much better than the average bee-keeper is able to do. But it shows what good management in a good location can do.—ED.]

THE DIVISION-BOARD FEEDER.

On page 895 you describe the Doolittle division-board feeder. I would kindly ask you to answer the following questions:

1. Does not a large quantity of syrup get lost by soaking into the wood the feeder is made of?

2. Do not a lot of bees get drowned? I suppose the bees have direct access to the syrup through the opening left under the top-bar; but is there no need of an arrangement to prevent the bees from getting drowned? If so, what kind of arrangement do you use? I am sure if I would use this feeder as mentioned in your paper it would soon be filled with dead bees.

L. MARNO.

Escondido, Cal., Dec. 7.

[1. Syrup does not soak into the wood of the feeder, for the reason that, after the feeder is finished, it is coated on the inside with paraffine.

2. We have had no trouble on that score so far. The sides of the feeder inside are only $1\frac{1}{4}$ inches apart; and if a bee gets down into the syrup it has no difficulty in reaching either one side or the other in crawling out; and the minute it is out of the syrup other bees will proceed to lick it off as they did that Dutchman's wife, referred to on another page.

Just try the feeder and be convinced yourself. But suppose bees did get drowned; it would be possible to put in a small float. A strip of wood $\frac{1}{4}$ inch thick and $\frac{7}{8}$ wide and 6 or 7 long could be used on each side of the central partition.—ED.]

ARE BEES INFLUENCED BY HABIT?

Are bees influenced by habit in regard to their habitations? I find that swarms from bee-gums do not seem to take kindly to improved hives, and have had a case of a transferred colony with brood and honey to swarm two days in succession at mid-day, going back of their own accord at about 3 o'clock. I have new swarms on full sheets of foundation, and have to confine them 48 hours, but still have had them depart for the woods.

ROBT. L. LUACES.

Puerto Principe, Cuba.

[It is possible that bees do object a little to the smell of fresh pine and paint of a new hive; but really I believe that the hive has nothing to do with their determination to swarm. A swarm once in a while gets crazy. I have hived such two or three times the same day. The only thing to do is to catch the queen and cage her. The bees may come out but will come back in a short time if they do not happen to unite with some other swarm in the air. It is not good policy, ordinarily, to have a swarm in an empty hive on empty frames. For the first 24 hours the bees should have not only foundation but a frame of old comb or unsealed larvæ with honey in it; then, if they act "cantankerous," shut them in the hive over night until they get over their frenzy or misbehavior.

Referring more directly to your question, I believe such crazy swarms would behave about

as badly with an old straw skep as they would with a newly painted hive. Their insane desire to swarm out would probably be satisfied for the time being only by a good long flight to the woods; but by shutting such bees up in a hive as you explain, being sure they have plenty of ventilation, they will begin to quiet down; but when a swarm comes out for the second time, I spray them with a spray-pump, either in the air or after they have clustered. A good artificial rain among the bees will induce them to cluster; and, when once clustered, fasten them in the hive and wet them down.—ED.]

THE DOVETAILED HIVE.

Mr. Editor:—The Dovetailed hive has now become the standard of excellence and the pride of many or nearly all bee-keepers—I mean the AD δ or hive-body from super down; but when the super is put on, that pride is wounded by a small defect that gives much trouble. That little flat tin that supports the section-holders is too *frail*. It gives down, and the section-holders get stuck fast to top-bars of the brood-frames; and when the super is pried up, and the brood-frames with it, the bees get mad, and possibly the bee-keeper and the A. I. R. Co. get a blessing. We are now putting lugs on the end blocks of all our section-holders at top, and hang them in the rabbit, and discard the tin; the thick end-blocks are best, as they fill the super, and nail up stronger. The top-bar of the shallow extracting-frame is also too *frail*, as it sags down and gets stuck fast; and the comb gets broken, and honey runs when the super is pried up. Now these are *very small* defects; but when remedied the hive will be our *pride* with the *super also on*. W B. RANSON.

New River, Va., Dec. 18.

[The same complaint has been entered before; and in view of that we have made the strips of tin heavier, so that we do not believe there will be any trouble in the future.—ED.]

THE DIVISION-BOARD FEEDER.

How and where do the bees take the foundation from the Doolittle division feeder? It is not plain to my mind. If the bees go in at the top, it seems to me the feeder would soon be full of dead bees.

BEGINNER.

Lincoln, Ill., Dec. 12.

[The bees get the feed by crawling in at the space between the top-bar and the top edge of the sides of the feeder. No danger about dead bees.—ED.]

PAINTING HIVES WHILE BEES ARE IN THEM.

Will it injure or kill bees to paint the hives after the bees are in them? What kind of paint is best to use?

L. O. BULLOCK.

San Antonio, Tex., Dec. 11.

[We make it a regular practice to paint our hives once every two years when the bees are in them, and we never noticed any bad results—how could there be? When the alighting-board is painted it may be necessary to protect it from the bees until it dries, by means of another thin board laid over it.—ED.]



QUITE to my surprise, and certainly to that of the bee-keepers of York State, I managed to attend their State convention.

IN our next issue we shall have a continuation of the report of the Denver convention, a report of the Michigan meeting that took place at Thompsonville, Jan. 1 and 2, and also one of the New York State convention at Geneva. GLEANINGS does not attempt to go into a full report of conventions generally, but makes an effort to present as far as possible the cream of the discussions — if not of all conventions, some of the most important.

AT the Michigan State Bee-keepers' Association, held in Thompsonville, Jan. 1 and 2, Mr. J. M. Rankin, who has charge of the apianary department of the Michigan Experiment Station, reported some interesting experiments in the line of developing bees with long tongues. He found that the average length of the tongue of black bees is 4.5 millimeters; Italians 5.1, while he had several colonies of a strain of bees at the Experiment Station apiary whose tongues measured 6.2 millimeters. He believed that, by a process of selection, and breeding with this trait in view, a race of bees might be developed which will secure more of the honey from clover-blossoms.—J. T. C.

300 CARLOADS OF HONEY FROM ONE STATE ALONE.

RAMBLER, in this issue, says that California, in a good season, has shipped out as many as 300 carloads. At an average weight of 30,000 lbs. per car, this would mean 9,000,000 lbs., or 4500 tons; and this does not take account of the large amount consumed annually within the borders of the State; but, as Mr. Martin very guardedly says, this is the possible amount in a good year—not an average.

Colorado, I believe, shipped out of its own borders last year 50 carloads, or 1,500,000 lbs. But the Coloradoans are great consumers of honey, and they have rather made an effort to keep the honey *within* the State rather than send it out.

RAMBLER'S ARTICLE IN THIS ISSUE.

THE article in this issue by Rambler is the last one of the present series. Just at present he is engaged in honey production, and will not be able to get out on his regular rambles over the country. He is too versatile a writer to keep his light under a bushel, however, and so we are negotiating with him for another series of articles on a somewhat different line; and in the near future we shall hope to give something more from his pen.

But referring again to his article in this number, I believe it is no exaggeration to say that this is the best short article on California we

have ever had. Mr. Martin goes over the subject so carefully that we have decided, as stated on p. 45, to put it in pamphlet form.

THE REFORMED SPELLING; AGREEING OR DISAGREEING WITH THE EDITOR.

WE are getting now a few more negative votes, although the preponderance of expressions seems to be decidedly for the shorter spelling. But I am coming to the opinion that those who are opposed to the change hesitate to record their opposition for fear we shall not be pleased. If there is any such a one among our subscribers I hope he will be free to send in his vote at once. Alack the day when our subscribers or correspondents shall feel constrained to keep still when they differ from the editor, and only speak out in meeting when they agree with him! It is much pleasanter, I know, to agree with a person or with an editor than to take up the cudgel and fight him, because, forsooth, the editor is supposed to have more space at his command, and he can choke the other fellow off whenever he pleases, or at least that seems to be the popular impression. It would be a sorry day for GLEANINGS if that condition of things should ever control its management.

We have not yet adopted the shorter spelling, because we are still waiting for a further and freer expression; and for fear that there are many who do not favor the change, I am going to ask that each opposer of the reform send in a postal card expressing his opinion, even if he puts on no more than "Reformed Spelling, No." Now, if we should adopt the new spelling after an invitation of this kind, and it is not accepted, you must not blame us, for now is the time to exert your influence.

But it does beat all, as Samantha Allen says, what wrong notions people do get. We never thought of adopting the spelling of Josh Billings, nor did we propose going as far as the *American Bee Journal*, nor had we proposed shortening more than one class of words—those that have the superfluous letters *ugh* like *though* and *although*. By the new form of spelling, if GLEANINGS adopted it, you would see *thot*, *bot*, *tho*, *altho*, *thoroly*, and possibly half a dozen other words. But as to spelling the word "through" *thru*, and also the word *throuth*, that does seem a little like the phonetics of Josh—too much so. We are trying it in our typewritten letters, just to see how it feels.

Remember, we are still on *the fence*, awaiting the pleasure of our subscribers.

Later.—Since writing the foregoing we have received a large number of negative votes, and at this rate the antis will vote down the proposed change. If so, it will be all right so far as we are concerned, as it will save us considerable inconvenience and more or less confusion between the spelling in GLEANINGS and that in our other publications. This is what one writer says, and there is a great deal of truth in it:

Responding to your call for votes on the "spelling reform," I vote no. If you could have all your subscribers before you, and ask for a show of hands, I

believe you would be safe in assuming that nine-tenths of those who do not speak out by letter would vote *nay* if simply show of hands would suffice.

Bee-keepers are a pretty busy lot, and, besides, most of us are not experts with the pen, and very much dislike to write, and will suffer a good deal without being drawn out, thinking and hoping such a fad will fall of its own weight. At the same time, those who favor a change of any kind are quite apt to voice that desire. I expect to be a subscriber to GLEANINGS as long as I live, and should like to have it please the eye as well as some of the other senses.

A. CHRISTIE.

Smithland, Iowa.

THE NEW DISEASE IN NEW YORK NOT FOUL BROOD.

HAVING just returned from the York State convention held at Geneva on the 10th, I find that a little space is still left in the first form that is now going to press. I can not go into details, but I will state that an interesting and profitable convention was held, the most of which was taken up with a discussion relating to the new bee malady or disease that seems to be raging in the eastern portions of the State. From all the evidence presented, I feel sure in my own mind, at least, that it is not foul brood, because it differs in quite a number of important symptoms. Prof. Benton, from the Department of Agriculture, Washington, D. C., stated that so far the examinations with the microscope had *not* shown the *Bacillus alvei* in the diseased matter that had been sent to the Department from the affected districts. The preliminary examinations of Bacteriologist Howard, of Fort Worth, Texas, seem to be to the same effect. It appears, however, whatever it is, that it is very contagious as well as destructive.

I make haste to bring this before the bee-keepers of New York, because it is important to have at least a reasonable assurance that it is *not* foul brood, even if we do not know what else it may be.

Both foul-brood inspectors West and Stevens were present; and, after a very thorough discussion, ways and means were devised by which the ravages of the malady may be held in check, it is hoped. The fact that the Department of Agriculture, Washington, is interested, and that the Commissioner of Agriculture of New York is also in hearty sympathy and co-operation, would seem to indicate that, so far as the higher powers are concerned, all will be done that can be.

ANNUAL REPORT OF THE U. S. B. K. A.

GENERAL MANAGER SECOR sent out his report some time in December; but by some oversight I omitted to refer to it before. It recites the work done against alleged honey-adulterators in Chicago, a full account of which was given in our issue for Sept. 1, page 652. While the first suit resulted in acquittal for the defendant, the results have been most salutary. A great deal was said about it in the Chicago papers, and indications seem to show that the old flagrant adulterators will be more careful in the future, because they seem to realize that the Association will not drop the matter at this point.

At the annual meeting of the Association held at Philadelphia last September, there

was submitted a new constitution, to be voted on by both societies, with the view of uniting the two if the members of both organizations should so vote. This new form was submitted to the members, with the probable result that amalgamation will now be accomplished in fact.

There are 400 members, and the financial statement shows a balance in the treasury of \$131.22.

The United States Bee-keepers' Association, or what will probably be called the "National," hereafter, should receive the hearty support of every bee-keeper interested in the enforcement of laws against adulterated honey.

HONEY-EMPTYING MACHINES; THE EXTRACTORS OF EARLY DAYS; J. L. PEABODY; THE EVOLUTION OF THE HONEY-EXTRACTOR.

AT the close of one of the sessions of the Colorado State convention, an elderly gentleman with a very pleasant face stepped forward and introduced himself as Peabody, adding that he had known my father for many years. On shaking hands with him I kept saying "Peabody" to myself several times, wondering why the name was familiar. "Peabody?" said I. "Why, as a mere boy I used to hear



J. L. PEABODY, THE MAN WHO FIRST ADVERTISED HONEY-EXTRACTORS IN THIS COUNTRY.

of a man by that name who invented the honey-extractor, the first machine that was ever put on the market in the United States."

"I believe I am the man," said he; and then as it dawned upon me that I was addressing one of the old veterans of the 60's and 70's in the days when Langstroth, Wagner, Gallup, Adair, Quinby, Tupper, King, and

others, were the leading lights, I felt as if I wanted to take off my hat, and I did, before the man who stood before me. "Indeed!" said I, grasping his hand again, for another shake; "and so this is Mr. Peabody, the extractor man, is it?"

He modestly assented, and then, changing the subject, said it would give him pleasure to have me take dinner with him, for he lived only a short distance from the capitol building where the convention was being held.

At the table that day we talked over not only men and things of the apicultural world, but our thoughts drifted toward the church, Sunday-school, and temperance. Both Mrs. Peabody and her sister are ardent workers in the church and Sunday-school, and it is real inspiration and pleasure to meet them.

No wonder the name "Peabody" sounded familiar to me. There is Henry W. Peabody, the great exporter, of New York, a cousin of J. L.; H. O. Peabody,* the inventor of the Peabody rifle, a brother of the one whose picture we present; and then there was George Peabody, the great London philanthropist, who gave 18 millions of dollars to improve the residences of the poor in London. J. L. Peabody, the one whose picture is here given, like the women of his household, is also interested in church work. While he has, perhaps, retired from active business, he seems to take an active interest in all lines of Christian work.

J. L. Peabody, the bee-keeper of years ago, brought out his extractor in 1870, it having been patented in 1869. I believe this was the first American honey-extractor, and perhaps the first in the world, that was ever put on the market. At that time it was styled a "honey-emptying machine." Prior to the advent of this extractor Langstroth and son built a machine in 1867, somewhat like the one invented by Hruschka himself, the Austrian who invented the honey-extractor. Soon after this, A. I. Root built the first *all-metal* machine, and I think he was the first one to use a gearing by which one turn of the crank would revolve the comb-basket two or three times; but it was not advertised until some time after Mr. Peabody placed his on the market.

The Peabody was a beautiful little machine, and so neatly gotten up that A. I. R. immediately concluded that his own extractor was out of the race.

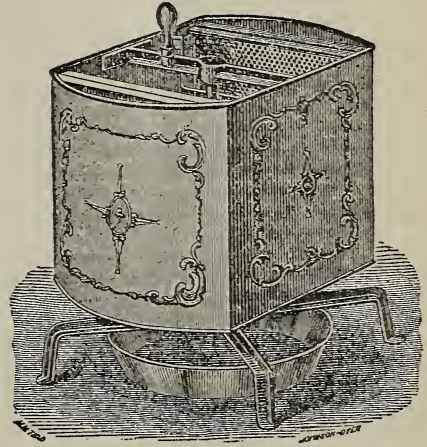
Whatever of neatness and mechanical excellence the Peabody possessed, J. L. says was due to his brother H. O., the mechanic who designed and built it. A man who could invent a rifle that was the sensation of army circles 20 years ago, could, as a matter of course, design a honey-extractor that was well nigh perfect for that time.

Unlike the extractors that had been built previously, and unlike those of the present

* Another rifle invented by the same man, called the "Peabody-Martini," was at one time the standard arm of Great Britain; and it was the same weapon that was used with such terrible execution by the Turks against the Russians. This I get from an old army paper called the *Army and Navy*, of Saturday, April 10, 1880, a leaf of which was placed in my hands by J. L. Peabody.

day, the whole can revolved. No gearing was used, because Mr. Peabody supposed that a can of large diameter would not require such gearing, and accordingly none was made.

Well do I remember when this extractor was received, and it is one of the first things that I do remember in my earliest experience with things pertaining to bees. The beautiful lettering and the neat Japan work of the original Peabody leave a distinct impression on my mind now; and, looking back at the old advertisements, I find that it was offered at the low price of \$15, including two honey-knives. This, for that day, was cheap.



THE FIRST HONEY-EXTRACTOR EVER SOLD IN THIS COUNTRY.

Soon after, another machine, made on the same principle, was gotten out by Gray & Winder; and in looking over the old volumes of the *American Bee Journal* I find it was advertised right alongside of the Peabody. While the can of the Gray machine revolved, it was geared, and to this extent it was an improvement, but it was not so neat in general construction, nor as good, as I remember.

About this time, also, another rival honey-emptying machine was put out called the Murphy; and this went one step further, by making the can stationary, or back to the original principle of Hruschka.

In 1873 A. I. Root started the publication of this journal, then only a quarterly; and very soon after that he began to advertise the Novice honey-extractor—a machine which, in its improved form, is still on the market.

A PROPHECY OF THE FUTURE OF THE EXTRACTOR.

In looking over an old Peabody catalog, issued in 1870, I find a prophecy (or what I shall take to be such) from W. F. Clarke, which reads:

Now in these balmy days of honey-slinging. The bees are kept without cessation bringing New stores of sweets; which quickly we transfer Into the MEL-EXTRACTING CYLINDER. And thence, by means of force centrifugal, Get honey by the pail or barrel full.—Clarke.

EXTRACTED HONEY AT 33 $\frac{1}{3}$ CTS.

On the third page of the same catalog I extract the following from the pen of E. Gallup, who had just been expatiating on the value of the honey-extractor :

I have sold all my extracted honey in cans, at three pounds to the dollar, and by the pailful at 25 cents per pound, and box honey at 25 to 30 cents, the canned honey going the faster.

Extracted *three pounds for a dollar!* and comb honey up to *30 cents!* This was in 1871. This same E. Gallup is now writing a series of articles for the *American Bee Journal*, and if he will tell us how we can get these same prices *now*, we will emblazon his name in the temple of fame and write him down as a greater than even Hruschka, the inventor of the machine for producing the kind of honey that he tells us brought 33 $\frac{1}{3}$ cents.

RIGHT AND WRONG PRINCIPLES IN EXTRACTORS.

In the years that have gone by since extractors were first sold in this country it has been clearly demonstrated that it is a mistake to construct machines with *revolving cans* or *without* gearing; and so, for the last 20 years, at least, extractors have been built with *stationary* cans, inside of which the comb-pockets, reversible or non-reversible, revolve, motion being imparted by gearing so that one turn of the crank-handle makes two or three turns of the baskets.

It is only within the last six or seven years that reversible extractors were put upon the market, notwithstanding the fact that Thos. Wm. Cowan, editor of the *British Bee Journal*, introduced in 1875, and put into use what we now call the Cowan extractor. It was nearly 20 years before this extractor was advertised and sold to any extent, at least in this country; and the fact that the reversing feature was adopted after this lapse of time is a pretty good evidence that it was good. Indeed, after looking over all the different plans of reversible machines, the Root Company adopted this as the simplest and most efficient.

THE COLORADO STATE BEE-KEEPERS' CONVENTION.—CONTINUED FROM LAST ISSUE.

At the evening session of the first day, President Aikin discussed his method of marketing his honey crop.

HOW AIKIN CREATES A HOME MARKET; RETAILING HONEY IN THE CANDIED FORM.

When he first began selling his product he looked up the markets at Chicago and other cities, and found that, after freight, drayage, and commission had been deducted, there would be but very little left for him. He then concluded that, if he could sell his honey as cheaply, or nearly so, as sugar and other standard sweets, consumers would buy it in preference, and he would make a better profit than to send to the city, and be *sure of his money*. Accordingly, he has for several years been selling his crop around home, and sending little or none to the city markets. He put the price low, and retailed it out in large and small lots, with the result that he had been able for several years to sell his honey almost at his door,

and get for it, in return, cash from neighbors and friends, rather than wait six months or longer on commission men of doubtful reputation.

He exhibited his pails of honey—honey candied solid. These packages were nothing more nor less than small lard-pails, with sloping sides, so that they would nest. They bore a very neat lithograph design on the outside. By first purchasing the stone (something that is analogous to an electrotpe for ordinary printing), the makers of the pails lithographed all his stock at a slight additional cost.



It is characteristic of Colorado honey that it candies very quickly. These pails are filled by Aikin shortly after the extracting or before granulation; and after the honey stands awhile it candies solid. A very brief statement in the lithograph design explains how the honey may be reliefsed after placing it in a pan of hot water.

These lard-cans have the advantage of cheapness, being almost the cheapest article that can be bought. Self-sealing is rendered unnecessary, because the honey candies so quickly it will soon be as solid as so much lard, and hence may be shipped safely to almost any point.

Mr. Aikin's favorite method of packing for shipment was to put these pails into common cheap cracker-barrels, pack straw between them, head the barrels up, and, presto! they

are ready for any kind of rough handling, and for almost any distance by rail.

It developed in the discussion that very many were fond of candied honey; and Mr. Aikin had no doubt been responsible for educating consumers in his locality to the palatability of honey in that form.

THE ECCENTRICITIES OF CANDIED HONEY.

Following this little talk of Mr. Aikin on developing the home market, there was a discussion on the subject of candied honey. Mr. W. L. Porter, a resident of Denver, one of the most extensive bee-keepers in Colorado, said that his honey, after candying solid, would sometimes return to a semi-liquid form. Indeed, quite a number reported that their honey behaved in this manner. Both Mr. Aikin and Mr. Porter, as well as some others, reported that, out of several cans filled out of the *same lot of honey*, and *at the same time*, some would candy solid and others remain liquid. Mr. Aikin reported that he had some honey that was exhibited at the World's Fair. It candied solid, and was now apparently going back to the liquid condition. From year to year it seemed to change in its general character, and the granules to assume a different color.

After the convention Mr. Aikin showed me some of this honey. It looked like any old candied honey; but it was interesting to see how different it looked from that which had been candied for only a few months.

As we learned later in the convention from Dr. Hedden, of the Colorado Agricultural College, of Fort Collins, there is only a certain portion of honey that really candies or assumes the granular form. Honey is made up of two elements besides water—levulose and dextrose. The latter candies, and the former remains a liquid. When one looks at a jar or pail of candied honey it seems almost impossible to believe that every particle of it has not candied. But the professor explained that, if the mass were subjected to a heavy pressure, the liquid portion (the levulose and water) would be squeezed out.

OVERSTOCKING IN COLORADO.

On Tuesday morning, the second day of the convention, the subject of overstocking a locality was assigned by the program committee to J. E. Lyon, of Longmont, a bee-keeper who owns and takes care of something like 500 colonies 30 miles from Denver. Longmont is a good locality for bees, and there are close on to 2000 colonies within five miles of Mr. Lyon's home, and, naturally enough, it was supposed that Mr. Lyon would have some grievance to present; but he had nothing of the kind. He went on to explain that a given area in some portions of Colorado would support many more colonies than an equal area in the East; but, notwithstanding, he believed there was a good deal of overstocking in Colorado. Apiaries would increase in size and increase in number; and he and his friends had noticed that the average annual yield decreased somewhat in proportion to the increase in the number of colonies in his immediate vicinity. Some winter bees died off very badly because Colorado winters are exceptionally hard on bees, and last winter was one of them.

The many warm days they had in winter drew the bees out, causing the clusters to expand and make general preparations for brood-rearing. A sudden drop in temperature caused many bees to die. The result of this was, that the question of overstocking was, to a certain extent, taking care of itself, because the large increase was pulled down largely by winter losses; but he could see a slight increase in the number of bees, in spite of such losses, and that consequently there was a slight decrease in the amount of honey per colony. Some localities for an apiary might support 50 colonies, and make a nice little profit for their owner, when, if he were to place in that spot 150, they would starve; yet some localities he knew would support for a single apiary 300 colonies. For example, Mr. D. Moon, of Golden, Colo., had 330 in one place, but he said there were immense quantities of sweet clover and alfalfa there. Where there is nothing but alfalfa to depend on, so large a number in one apiary would prove too many. Mr. Lyon believed emphatically in the principle of the largest amount of returns for the least amount of labor; and that one should be careful not to get more colonies in an apiary than one's particular locality will support to advantage. A locality having both alfalfa and sweet clover will stand more than when it depends on alfalfa alone. The former will not yield honey invariably every year, while the latter will.

In the discussion that followed, it was somewhat a matter of surprise to a tenderfoot like me to learn how many colonies could be supported on a given area in Colorado. Notwithstanding only a tenth of the State is under cultivation, or ever likely to be, and that bees can be kept only in these cultivated areas, the average annual output from these limited portions of the State in honey is simply enormous, in spite of the fact that bees are packed in these localities so thickly that one would think there were would be no chance for any one to make a living.

SHOULD BEE-KEEPERS EMIGRATE TO COLORADO?

Now let me give a word of caution to the tenderfoot of the East who may look with longing eyes over toward Colorado. Take my advice. Keep out of it. The good bee localities are already overstocked, and I did not learn of a single place where an Easterner or anybody else could locate and go into bee-keeping profitably, or, perhaps I might better say, *honorably*, because the localities have been so thoroughly taken up that it should be a matter of honor for others to keep out. I know of no way in which one can go into these fields without buying some one out. It is true, that certain portions of Colorado that are now barren deserts may some day, when hydraulics is a little better understood than now, be made veritable little gardens of Eden; but until some method or plan is discovered whereby water can be elevated 500 or perhaps 1000 feet, some of the best agricultural lands, now deserted and dry, simply for want of water, will continue to remain so.

I know I am digressing somewhat from the

subject of the convention. Well, we have left that, but I wish to say this for fear I shall forget it: It did seem too bad that there are *miles and miles and miles* of, beautiful productive soils which could be reclaimed if water could *only* be put on them *somehow*, but which are now the home of the cactus, the jack-rabbit, the coyote, and the prairie-dog. Those towering Rockies catch nearly all the would-be rain-clouds, and, as a consequence, these regions are, perhaps, destined to remain arid, possibly for centuries to come.

"Why," said I, "Mr. Rauchfuss, is there not water in that desert piece within a hundred feet of the surface?"

"Yes, probably."

"Well, why couldn't they sink a lot of hundred-foot wells and erect over them as many windmills?"

Mr. Rauchfuss turned and smiled as only a Westerner can smile at the exaggerated notions of a "tenderfoot." "Why," said he, "they could not afford it. The narrow belts of land reached by irrigation could produce crops so much more cheaply that windmill irrigation would be impracticable; and no one is fool enough out here to sink a lot of good gold in holes of that kind in the ground; although we have plenty of fools," he continued, with a significant smile, "who fool away a lifetime and immense fortunes in trying to *find* gold down *other* holes."



Bear ye one another's burdens, and so fulfill the law of Christ.—GAL. 6:2.

Every man shall bear his own burden.—GAL. 6:5.

I have heard people quote the two texts given above, in order to prove that the Bible is inconsistent; that it says one thing in one place, and then contradicts it and says the very opposite in some other place. I can hardly believe, however, that any one honestly thinks the Bible contradicts itself in this 6th chapter of Galatians.

Almost every one, or at least every one who has tried to make peace in the world, has had some experience in helping people to settle difficulties—or, perhaps I should say, in helping people to get along with each other. Sometimes two brothers can not agree. Yes, and there are even husbands and wives who do not get along, and think of separating. Some mutual friend—a Christian man, we will say—exhorts both of them to bear with one another; and if he is a wise man, very likely he has a confidential talk with each one individually. When the husband tells his grievances, and narrates how he tried to do every thing right when his wife persisted in doing every thing wrong, then this good Samaritan exhorts the husband not only to bear his own burdens, but to put up with unreasonable and inconsistent things in his companion. While talking to the husband he urges strongly that

he, the husband, should try to believe he is largely if not mostly at fault. He exhorts him to bear all his own burdens, and a good deal more, for the sake of peace. When we wish to straighten a wire or a piece of iron pipe, we spring it beyond a straight line, because we know it will spring back more or less as soon as released. This we do to make it perfectly straight. Now, this peacemaker exhorts the husband to shoulder *more* than his share of the blame, in order to get him (like a piece of metal) in this overdoing to bear, probably, about his full share. Well, when he talks to the wife he pursues much the same tactics. He endeavors to convince her, also, that it is her Christian duty under the circumstances to put up with a great deal—perhaps more than really belongs to her. He tells the husband that he is the stronger of the two; that his shoulders are broad, and exhorts him to bear with the comparatively weak helpmeet. Then he tells the wife that woman's great weapon and vantage ground consist in being gentle and winning. If he can succeed in getting each one to promise to go *more* than half way, he has probably gained the victory; for humanity is so prone to selfishness, especially when it gets into a quarrel, that, when each one thinks that he or she is doing a great deal more than justice demands, he or she will probably get it about right.

Now, somebody who looks on, or somebody who heard the conversation, to each of the parties separately might say, "Why, that man is an old hypocrite. He talks one thing to the man, and then he talks another thing to the wife." Now, the man is not a hypocrite at all. He is not unfair, unreasonable, inconsistent, nor untruthful. He simply adapts his talks and exhortations to the individual. Whenever people are in a quarrel their judgment is warped, and they must be pulled strongly in the contrary direction to take out this crook. Of course, you can not often persuade such people that their judgment is biased and unreliable; and unless they exhibit more than usual reason and intelligence it will be a waste of breath to tell them so. We find people all around us with their judgment warped this way and that, and these prejudices get them into trouble. It is our business, in trying to establish harmony, to pull some people one way and other people in another way; and the one who takes the responsibility on himself of straightening out crooked people should be exceedingly careful that *he* is not warped nor prejudiced himself.

Not very far from where I sit writing, a woman recently murdered a man in broad daylight, or almost broad daylight. Nobody doubted her guilt, and yet she was cleared. The general impression is that she was good-looking and smart, and in this way she "warped" the judgment (or something worse) of the whole twelve on the jury. May God help us to recognize and beware of the things that may warp *our* better judgment or induce us to put judgment out of the question, and yield to downright dishonesty because the temptation is great.

In my talk about plants in our last issue I

spoke of taking a slip from one of our golden salvias and making a potted plant of it in just a few days. Well, after the little plant got its roots out all around the sides of the pot, and it had sent out five or six beautiful clean golden-hued leaves, I took it over to the office with some other plants to show to the women-folks in the factory. Every woman loves plants and flowers, and every man ought to be interested in them on that account, at least, if for no other. Well, every one uttered an exclamation of surprise at that dainty little salvia in its miniature pot; but before I had gotten half around with it I thought it was losing its bright attractive freshness; and when I got into the next room its leaves were *surely* beginning to curl up. Then I remembered the air in our rooms is much dryer and perhaps somewhat warmer than the damp air of the forcing-bed where it had been kept. So I hurried along for the sake of my little plant, to get it back to its accustomed home; but before I got around, its leaves were curling up more and more, its brightness all gone. It made me think of a bright, prattling, smiling baby that you take out of its own home and carry out among strangers. For a time the bubbling joyous spirit holds out; but the strange faces and the unfamiliar surroundings soon begin to make the little face look sober, and before you know it the little lips are puckered up ready for a cry. Kind and encouraging words do not help matters much. The baby must be gotten quickly back to its own home and to its *own mamma*, and even then it may take quite a little spell to get over its fright and resume its normal joyous spirit. It was just so with my pet plant. By the time I had got over to the greenhouse its leaves were all rolled up, and I thought it was going to lop down flat. I put it back in the warm damp forcing-bed, shut the lid down tight, and watched to see if I had really *killed it*, because I was so anxious to take it around among my friends and have it "show off." As the matter was to me one of great interest just then I sat down, watch in hand, and watched it. In five minutes I thought there was a little improvement. In ten minutes the leaves began to unroll, and the drooping stalk began to lift up its head a little; and the next time I came around it was just as bright and smiling, with its bright little leaves turned over toward the setting sun, as if it had not been disturbed at all.

I learned several lessons from the transaction. One is that little plants with soft roots and soft sappy foliage must be handled with much care, or they will get a serious setback. A friend of mine who is skillful with flowers says that many delicate plants will drop their leaves when you carry them from one greenhouse to another, or even from a dwelling-house to a new location; and it will take considerable time for the new leaves to come out and have them become acclimated to the new situation and order of things.

A year ago we sowed a lot of cabbage seed in a bed that was partially shaded, and rather too warm for the cabbage. Before I knew it they had become so long-legged that I told

the boys I feared they were spoiled. They declared, however, they would be all right if we would put them outdoors and harden them off properly. As this was in the middle of winter I thought it was a little doubtful; but we happened to have a long bed warmed just right with exhaust steam, and a nice spell of weather permitted us to get them out in very good shape. Many of them were so long that we had to lay them down slanting to get the leaves clear down to the surface of the ground. By handling with considerable care until they had taken root in the new place we grew some of the finest cabbage-plants I have ever seen; and by the first of April we had hardened them off gradually so they stood a severe freeze without any covering at all, as we wanted the glass for other stuff.

Now, it would be folly to object to the use of warm glass greenhouses for starting plants because it makes them tender. It does make them tender and useless for planting out of doors at once; but by *gradually* hardening them off, as every gardener knows how to do, and not giving them setbacks, they may produce the very best of plants for any purpose whatever.

Human beings are much like plants. May God help us to remember they are of far more consequence than the plants. A harsh or careless word has dried up the life and wilted the happiness of more than one child; yes, and a harsh and unkind word has more than once driven the joy all out of the heart of the dear wife. Many people are bashful and timid; and what a cruel thing it is to wound needlessly and give pain to those who are anxious to do right, but who, because they may be amid new surroundings, inadvertently make mistakes! A boy from the country goes into town. Poverty or some other circumstance has kept him back, and he knows but little of the ways of the town. He is keenly sensitive, however, like my little plant. Now, how wicked it is to call attention to his inexperience!

When I was about 18 I was exceedingly timid and bashful, and, I presume, awkward. I commenced going to school in town, two miles and a half from my home on the farm. It took me a long while to become acquainted. After a spell, however, I did get to know the different pupils so I could talk with some of the smart good-looking girls at noon time. I remember they once sang something that pleased me exceedingly; and my enjoyment broke the crust of my diffidence so much that I tried to tell the young women how I felt. They seemed pleased, and I was feeling quite happy until a smart young man who had always rather looked down upon me because I was a farmer's boy, and did not wear patent-leather shoes, and smoke cigars, as he did, came up. I had just added that I did not mean to flatter the young ladies, but I actually felt all that I had said. He replied for them, something like this: "Oh! you need not worry about having flattered the singers. What you said was exceedingly *flat*, but there was no flattery about it." At this pun they all joined in a good-natured laugh, boys and

girls as well—that is, all except myself. The pain and mortification stung me to the quick ; and I do not think I ever saw that fellow afterward without feeling anew the pain of his jeering remark. All my joy and happiness were gone that day, and for days and weeks whenever I thought of it. I kept in the background, and sometimes I declared I would go out in the woods and live by myself, and keep away from humanity, especially from the well-dressed people in the towns and cities. I fear I did not have the gospel of Jesus Christ to brace me up at that time. I did not tell anybody, but I just kept thinking of the unkind speech. Now, I needed just then a little exhortation in the way of bearing burdens. I needed the assistance that only the words of the dear Savior can give, but I did not know it. The young man who sneered at me also needed a severe reproof, which I fear he never got. In one way, however, it was a useful lesson to me. I stuck to my books after that as I had not been doing before. I made some mighty resolves that the time should come when that fellow should look *up* to me, and not down on me ; and it did not take very hard work nor very many years, because he commenced going down almost before I had started to climb up.

Of late my mind has been dwelling a good deal on boys who are getting to be almost men. These boys are in the hardening-off stage that I have spoken about with the plants. They are just coming out of the forcing-bed of childhood. They are getting able, and *are* able to stand a certain amount of contact with the frosty world ; but it is dangerous business to give them too much freezing before the character becomes well “rooted.” Paul in his message says first, “Bear ye one another’s burdens ;” and we who are older and stronger should keep a careful watch over the boys. Do not let them lift too hard ; do not let them work too many hours ; do not let them go out into the cold chilly world too long at a time. If they go to the great cities, keep an eye on them. Somebody has said we are crowding young men into office at such an early age, they get into the insane-asylum before they are old enough to be at their best. I fear it is somewhat true. Let us all try to bear the burdens a little of the younger and weaker. Let us be exceedingly careful about hasty censure, and inquire into all the circumstances before we severely reprove or criticise.

Then let me say to the boys, and to the men and women and children, bear up manfully under the burdens that seem to be put on you. Shoulder your responsibilities. If it seems to you you are loaded down a little more than is your share, be brave, and do not be in haste to complain. Many things that seem beyond our endurance at the time, we look back and laugh at afterward. Many a young woman has thought, when she first took charge of her home, it was just all she could possibly do to take care of that home ; but as she kept on being faithful in few things she found it was not so hard after all. When the little stranger came into the household, for a time she thought she could not all alone bear this additional

burden ; but grace and strength and wisdom came as the burdens increased ; and when one after another came till half a dozen were added to the household, she looked back and had a good laugh to think of the time when she worried and fretted over the responsibility and care of just one baby, and the father, to be ministered unto. Without God’s promises I am not surprised that people become discouraged ; but with these promises, and with the great blessings that continue to multiply and increase to all who are seeking God’s kingdom and his righteousness before any thing else, I am sure no one ever need give up and think his burden too great for endurance.



Well, our greenhouse is now “a thing of beauty, and a joy” every day. I have got the “hang” of making cuttings until they grow every time — coleis, salvias, geraniums, fuchsias, etc. But I have not got out of trouble after all. In fact, I begin to think it is better we should have troubles, or else we could not have that thrill of happiness that we experience when we fight through them and have occasional successes. For instance, one day Frank told me ants were crawling all over our orange-tree. I told him the ants would not do any harm ; but pretty soon the tree began to look sickly and *filthy*. A careful examination showed the scale insect was working on the under side of the leaves, and the ants were following these scales as they follow aphides for the sweet exudation. The scales were their “cows ;” and Peter Henderson says they will transplant these scales, not only from one leaf to another, but from one *plant* to another ; and I was horrified to find scales actually on a young orange-tree quite a distance from the old one. Of course, I went for the books ; but before I had invested much in whale-oil soap, pine tar, and such like remedies, one of the flower-journals said a tub of water at a temperature of 120 degrees is the best and cheapest insect remedy in the world—that is, for all greenhouse plants. Invert the plant and plunge the foliage into the hot water, and keep it there half a minute by the watch. Now, we have water almost boiling hot in one of our cisterns. It accumulates every day from the condensed steam that runs through the tiles. We very soon had a crock of water at 120°. Frank felt sure it would kill the plants, for it was so hot he could not hold his hand in it. But it did not kill the plant ; but it did boil the scales and every other insect and fungus until they were dead enough. We rubbed off the scales from the under side of the leaf, and washed the tarry substance left by the ants in making tracks with their dirty feet ; and the orange-tree looked like a new one, which indeed it was. We found red spiders on some of the roses, and mealy bug on the coleis ; but the hot water

"cooked" every one of them. The ants left the orange-tree, but went to burrowing in the pot of a chrysanthemum. We dropped the plant out of the pot and removed most of the dirt, then dipped the plant, roots and all, in the hot bath, and that was the last of the ants. You see, hot water is my old remedy for grip, toothache, and earache. Oh how I do love to find remedies for our troubles in pure soft water, instead of being obliged to turn to drugs or physic!

My coleï are now just radiant. Here is something from one of our old friends in regard to their care and culture:

Dear Friend :—We notice with a great deal of pleasure that you have at last got to where we expected you would, sooner or later—into the flower business. We had often wondered that your love of flowers had not induced you to build a greenhouse for decorating your own grounds.

We notice you are specially interested in coleï. We grow a great many of them; and if we were on your side of the boundary line we would try to sell you some of our choice varieties, but you would no doubt be able to get them better and more conveniently in the United States. We, however, are getting some coleï seed from Italy, and shall be glad to send you some. We grew some of it last year, and found it very good, producing some of the large-leaf varieties, very striking and very beautiful.

We wonder if you have tried any of the beautiful ornamental foliage plants used for carpet-bedding, known among florists as alternanthea. With these you can make beautiful designs, colors ranging from yellow to bright red. They can be clipped to any shape. We have a man who at one time worked for a very large establishment in Philadelphia, where they expended over fifty thousand dollars a year on such bedding-plants. Since coming here the party I refer to has made some of the most beautiful beds for our customers in Toronto that I have seen anywhere.

A few hints on the culture of coleï might be helpful. They require a high temperature in winter. They are very easily propagated by cuttings, and can be increased very rapidly toward springtime when the temperature is more favorable than it is at this time of the year. They do not thrive very well in a temperature lower than 60 degrees. The colors come out much better in a very much higher temperature. The worst enemy of the coleus is the mealy bug, which you no doubt have already discovered. The only remedy which seems to be effectual is constant syringing. If the plants become very badly infested, a tooth-brush and a great deal of patience is the only remedy.

The alternanthea are generally propagated from cuttings. They are placed in shallow trays of sand in a freshly made hot-bed. They delight in bottom heat, and will root in a day or two. It is just fun growing this kind of plant; and for carpet bedding and decorating there is nothing else so beautiful. The only drawback in connection with these plants and coleï is that the first frosts usually nip them and spoil their beauty. They are rather tender.

EDWIN GRAINGER.

Toronto, Ont., Dec. 29.

By the way, the forcing-bed I have mentioned (it is a bed inside of a greenhouse, covered with a hinged sash) is proving serviceable in many ways. When I get in some new plants, and some of them are disposed to wilt when exposed to the full open air of the greenhouse, all I have to do is to put them into the forcing-bed or "hospital," as I call it, for half a day, or sometimes a whole day or more, until they take root enough to stand it. A coleus that I prized a good deal was snapped off short. I took the whole stalk, without any roots, and put it in the wet sand in the forcing-bed, and it is now sending out roots, and is a good plant again. The stem where the top was broken off is sending up shoots so they will be all right again.

My little salvia that I told you about has

now got its little pot full of roots, and in its eagerness for air and moisture the roots are sticking out into the air between the soil and the sides of the pot. Perhaps this is because I still keep it in the damp atmosphere of the forcing-bed. And this reminds me, these little fine fibrous roots with eager mouths to take in air and moisture are the same thing, or pretty much so, that we find pushing into tiles for underdraining—that is, whenever said tiles carry a stream of water all summer long. Now, has any thing ever been done in the way of inducing roots of valuable plants to run into tiles so as to have the best sub-irrigation in the world? So far as I can learn, almost every plant pushes out these little fine fibrous roots, especially when it is making its first growth; and when a plant begins to bloom, these little roots are tenfold more active. It makes me think of the bustle of a sitting hen when she leaves her nest for a few minutes for refreshments. At this period she is not an ordinary individual; and so with the plant when it pushes out flower-buds. One of my golden salvias had been in bloom, or at least I called it in bloom, for several days. One morning I noticed one of the scarlet buds opening its mouth and thrusting out something that looked like a blood-red tongue. An hour later the tongue had protruded quite a piece; and by night this fiery-red tongue was out almost an inch. Just about this time I decided it was a honey-plant, and one of the mint family. Not long afterward the ants seemed to have come to a similar conclusion, for they were ducking in and out at the tip of that tongue at a rate that showed they had found *something* good.

MUSHROOMS AND GRAND RAPIDS LETTUCE.

Almost every year we have more or less beautiful mushrooms in among our lettuce. In a recent number of the *Practical Farmer* friend Greiner recommends planting mushrooms in with the lettuce when you make the bed. The conditions of temperature, soil, and moisture that suit the Grand Rapids lettuce are just about right for mushrooms. You can get the best of mushroom bricks for only a few cents a pound; and if you break them up into pieces the size of a walnut, and plant them one or two feet apart in the lettuce-bed, you will have lettuce and mushrooms together after a while, and your mushrooms will keep coming up more or less winter and summer wherever the soil may be thrown, outdoors or in. I think it was one of our government bulletins that said mushrooms are an excellent substitute for beefsteak—that is, when the price of the latter is away up. At the present price of steak there is now an additional incentive to grow mushrooms. In our family one mushroom in a kettle of soup not only takes the place of meat, but of oysters also; and with a little pains the mushrooms should not cost nearly as much as either of the others.

WHAT CAN BE DONE WITH CARROTS ON ONE SQUARE ROD.

We had a piece of carrots one rod square, and got 12 bushels from it, and sold them at 30 cts. a bushel. The Craig potatoes didn't do very well here. We

have had them a few years now, and the biggest we got was as large as a hickorynut. FRED A. HUND.
Peters, Mich.

Why, friend H., your yield of carrots was astonishing. Twelve bushels to the square rod would be at the rate of 1920 per acre. Have you not made a mistake? Your report on the Craig potatoes is also astonishing, but the astonishment is in the other direction. With us, every year since it was originated it has given us the largest yields and almost the largest potatoes of any thing we grow. In fact, Mrs. Root complains that they are *too* large to cook. Your ground must be specially good for carrots, and specially bad for Craig potatoes. Will you tell us a little more about the carrots—how the crop was handled? what kind of seed?

Special Notices by A. I. Root.

THE NEW EGG-FARM.

Some 25 or 30 years ago the *American Agriculturist* gave a series of articles by H. H. Stoddard, entitled "An Egg-farm." The very first chapter interested me perhaps as much as or more than any thing else I ever read before in my life. It was not because I was specially interested in poultry, but the ideas of the writer seemed to apply to all animated nature, man included. I read each chapter as it appeared, and counted the days until another *Agriculturist* would probably come. I corresponded with the author, and even started an egg-farm; but other business that must have my attention prevented me from working it out, as I have wanted to do all my life. When I visited H. A. March, of Puget Sound, I was delighted to find there a successful egg-farm in practical operation on the plan laid down by Mr. Stoddard. During the years that have passed we have sold hundreds and may be thousands of Stoddard's Egg-farm; and I have always felt happy to see boys and girls, and men and women, become enthusiastic from the same book that pleased me so much.

I have wondered many times that Mr. Stoddard had not put an appendix to this book, telling us how this creation of his own had "panned out" during the intervening years. Well, just now we have a large new book, entitled "The New Egg-farm." It has over 300 pages and 150 illustrations, embodying all that is most valuable from the author's first book, to which are added the results of a lifetime of work, invention, improvement, and observation. As I look at its pages my old enthusiasm comes up again, and I almost feel sad to think that I can not drop almost every thing else and "play with the chickens;" but you know I promised Mrs. Root that I would not start out in any more new enterprises to add to my already too many cares. But now for the egg-farm.

Stoddard's great theme is *exercise* for fowls, and, in fact, exercise for everybody who is sick. He says if you want hens to lay, don't warm them up with steam-pipes or hot water; do not even put them in a greenhouse, for the sun will make them too hot by day, and leave them too cold by night. Instead of outward artificial applications to make them warm, give them open sunshine, and teach them to *scratch*. You know a hen is always happy when she is digging up your (or your neighbor's) flower-beds; and, by the way, she is always healthy, and lays eggs too. Well, now, just develop this craze. In winter give them leaves, chaff, straw and scatter the grain all through the trash, and let them dig and scrape to their hearts' content. If you have not much land, give them a long, narrow runway; then throw out inducements to them to run and "scratch" from one end of this runway to the other. But this is not all. Friend Stoddard is not content with teaching them to use the muscles of their legs. They must be taught to use their wings as well; and this exercising commences with the chicks just as soon as they are old enough to make their little legs go. As soon as they can make a hop over a board they are taught to do it; and as they grow older the little fence is made higher till they will go over it "on the fly," using both wings and legs; and this exercise is given the laying hens outdoors in the open air, as far as the weather will permit, all winter long. This run-

ning and scratching and flying will cure all ills that chicken flesh is heir to; and if they cut and run *enough* all day long, they will not need any "balanced ration." Give them whatever you have handy, only so you keep them busily employed.

Now, what interests me so greatly is that friend Stoddard's logic applies so patly to humanity as well as to chickens. To arouse their enthusiasm, get them to work (in the open air if possible); keep them busy at something they like, and they will be happy and well. Why, I verily believe that one great reason why people get well with patent medicines and mental science, etc., is that the excitement about it gets the blood to stirring in their sluggish veins, and then, lo and behold! they are well. Of course, one man can not spend all his time in keeping 50 or 100 hens and chickens running and scratching; but with the cheap home-made machinery described in this new book, one man can keep 1000 or several thousand laying hens busy and happy.

I have wanted to visit Mr. Stoddard, and see his egg-farm in working order, all my life; and I feel just now as if it would be the next trip I make anywhere as soon as the weather is suitable.

The book can be mailed from our office for \$1.00; or we will club it with GLEANINGS for \$1.50. If you are a subscriber to GLEANINGS we will mail it to you for 75 cents.

FORAGE CROPS OTHER THAN GRASS.

The above is the title of another new book by the O. Judd Co., by Prof. Thomas Shaw, formerly of the Ontario Agricultural College. Prof. Shaw has made himself a reputation that should stand for ages, in his excellent articles on weeds and how to eradicate them. I have been astonished and delighted to find that we have at least one man at the present day who is an enthusiast on the matter of weeds, and has learned so much about them that he can tell friends from foes. Well, in this new book just out, among other forage crops he discusses sweet clover; and I take pleasure in copying what he says, hoping it may end the discussion as to whether *this* plant is a friend or a foe:

Sweet clover (*Melilotus alba*) is so named, doubtless, from the fragrance of the odor which characterizes it. It is also frequently called Bokhara clover. The two species, *Melilotus alba* and yellow sweet clover (*Melilotus officinalis*), are closely allied, but the blossom of the former is light-colored, while that of the latter is yellow.

Sweet clover is a strong, vigorous-growing biennial. It is branched and upright in its habit of growth. It is one of the most hardy plants of the clover family. When once firmly rooted it has great power to withstand drouth and heat, and it can also endure low temperatures. Being a ravenous feeder it is able to maintain itself in soils too poor to sustain other species of the clover family. The writer has succeeded in growing sweet clover on a vacant lot in St. Paul, from which several feet of the surface soil had been removed, inasmuch that only sand and gravel remained. Moreover, it is a legume, and one which has much power to renovate soils. A plant, therefore, which is possessed of such powers should not be looked upon as worthless. That it is so is the popular idea. It has even been looked upon as a weed, and some countries and states have included sweet clover in the list of proscribed noxious weeds.

But sweet clover has been grown to some extent to provide hay for live stock in the cured form, and also to provide pasture. And it has been grown to furnish food for bees when it is in bloom. It has been grown for all these uses in the South, more particularly in the States of the lower Mississippi basin. For providing hay it is not very suitable, for the reasons, first, that it is woody and coarse in character; second, that it is difficult to cure; and, third, that it is not much relished by live stock. They do not care to eat it when they can get a sufficiency of other food, as corn, sorghum, or other clovers. As a food for bees it is excellent; and if a part of the plot or field is cut before coming into bloom, the season of bloom will be much prolonged. It is also sown along the sloping embankments and the sides of railway cuttings. The object sought is to prevent these from washing, and it has proved highly serviceable for the purpose.

Sweet clover has not been much grown for pasture, but for such a use it may yet prove to be of value. When sheep have access to a variety of grasses they will probably pass sweet clover by, even when it is young and tender. But if confined to such a pasture when it first begins to grow, they would soon begin to crop it down. To force animals thus to eat food under constraint is not good for them; but thus it is that in

some instances sheep have to be confined on rape, and forced to eat it through sheer hunger. In a short time they become very fond of the rape. So likewise they may be taught to eat sweet clover. Of course, where other and better kinds of clover will grow, it would not be wise to trouble with sweet clover. But in the semi-arid belt east of the Rocky Mountains, and in the poor sandy soils of the South, it may yet be found that an important mission awaits this plant; first, in growing a crop that will renovate the soil when plowed under and increase its power to hold moisture; second, in furnishing food for bees; and, third, in providing pasture. Hay should be sought from it the first year rather than the second.

Sweet clover can be sown only in the spring or summer in very cold latitudes; but in those that are mild it can be sown in the autumn or spring, preferably the former. Usually not less than 15 pounds of the seed is sown to the acre. In the South it is frequently sown on the surface of stubble land after the crop has been harvested; and when thus sown it is simply covered by the harrow. If sweet clover is kept from blossoming, the land will soon be freed from it when it is so desired. Although sweet clover seeds profusely, the high price of the seed at the present time stands much in the way of extending its growth.

In regard to the closing sentence in the above, I presume friend Shaw was not aware of how low sweet-clover seed is now sold by honey-producers. Prof. Shaw has, perhaps, been instrumental, more than any other one man, in introducing Dwarf Essex rape throughout the United States—a plant that has already made its way, and is now a great boon to sheep-growers in particular. The book treats of Indian corn, the different sorghums, all the clovers, rape, cabbage, cereals, millets, root crops, etc. It has about 300 pages and many illustrations. Price \$1.00. We can mail it from this office.

PRICES OF SEEDS FOR 1900.

In our next issue we will give our usual abbreviated list and prices. As a good many of the catalogs are in, the prices on the staple commodities are now pretty well settled.

GRAND RAPIDS LETTUCE.

I am exceedingly glad to tell you that the 25 lbs. of Grand Rapids lettuce, California grown, produces the handsomest crop, every plant true to name, so far as we have yet discovered, of any I have ever offered for sale. Now is the time to sow the seed if you want to hit the big demand at just the right moment. The price is only 5 cts. per ounce; 1 lb., 50 cts. If wanted by mail, add 9 cts. for postage.



UTAH HONEY—BOTH COMB AND EXTRACTED.

This is about the finest quality of honey we have had in several years. We can still supply the extracted in 60-lb. cans at 10c per lb.; 10 cans at 9½c per lb., and the comb honey, 24 sections in a case, at 16c per lb. We expect to close this out soon, so send your order promptly.

CARLOAD ORDERS.

Carload orders from dealers are coming in at a lively rate, and we now have unfilled orders for from 12 to 15 cars which we must get out as rapidly as possible. We have a very large stock to draw from, and have most of our supplies in materials of all kinds on hand for the season, including over two million feet of dry pine and basswood lumber. We never were in better shape to handle the business that comes our way than at the present time. At the same time, when orders come in at the rate of two carloads a day we can not ship them all at once. We trust none will suffer inconvenience by some unavoidable delay. Orders do not roll in at this rate all the time.

A. B. Williams & Co., of Cleveland, who some time ago furnished quotations of the Cleveland honey market for GLEANINGS, have made an assignment; and from all that we can learn their creditors will get very little. The liabilities appear to be from \$10,000 to \$12,000, and assets about \$1500. We have not published their quotations the past season, because we were not

fully satisfied with the way they treated their shippers. The principal complaint was their tardiness in answering letters. We did not have a sufficiently definite case against them to warrant our publishing a word of caution in GLEANINGS, yet we did not have sufficient confidence in them to continue publishing their quotations. They had 10 cases of our honey unsettled for when they failed. We know of several others who have likewise suffered loss. When I called on them about three weeks ago they had very little honey in the house, but I do not know how much they had sold, and had not yet settled for. I hope very few have lost at their hands.

THE COMING CHICAGO CONVENTION.

The date set for the next National Bee-keepers' Association (or the United States Bee-keepers' Association) is the 28th, 29th, and 30th of August next, the first session being Tuesday evening, the 28th. The place of meeting is Chicago during the time of the Grand Army encampment, when low rates of a cent a mile will be in force all over the country. A program has been in process of preparation for some time back, and among some of the special features will be one and possibly two stereopticon lectures on two separate evenings. The Question-box for the latter half of the day sessions will be another feature. The questions will be of a character to interest advanced bee-keepers as well as beginners.

Every effort is being put forth to make this one of the best in point of discussion and attendance that has ever been held. Chicago is a central point, and easily accessible from every direction, and there is no reason why there should not be a large meeting.

Local associations, State and county, should see to it that delegates are appointed to attend this meeting.

POST CHEQUE MONEY.

Our attention has been called to a system of currency called "post-cheque money," which consists of fractional bills of denominations of 5, 10, 15, 25, and 50 cents of small size, and 1, 2, and 5 dollars the size of ordinary bills. These are to be used for ordinary currency in passing from hand to hand, but on one side are arranged blanks for affixing a postage stamp, and writing in the name and address of the party to whom you wish to make a remittance. Sign your own name and address. The bill then becomes a check for safe transmission through the mails. When the party to whom it is sent receives it he acknowledges the receipt of payment in a blank provided, presents it at the postoffice, and receives a fresh one in its place, which may be passed as money. The advantages of this system will be very apparent to one who examines it. It makes it very convenient to send a remittance of a small amount in a way that is safe. To inclose an ordinary bill in a letter is considered rather risky. If the latter is stolen, the money contained may be used by the one who gets it, and can not be identified; whereas, with post-cheque money, one of these bills filled in as provided becomes as safe as an ordinary bank check or draft, and is not subject to the usual charge for collection that banks make on checks, nor to the inconvenience of going to the postoffice to obtain a postal money order. The government still retains the revenue feature by stamps affixed when these bills are written upon and remitted through the mails. A bill will be introduced in both houses of Congress this winter for the adoption of this post-cheque money. Those of our readers who are interested should send to C. W. Post, Battle Creek, Mich., for a copy of the pamphlet setting forth the system and its advantages; and if they approve, then they should write to their representatives in Congress, urging their support of the measure.

CONVENTION NOTICES.

CALIFORNIA BEE-KEEPERS' CONVENTION.

The tenth annual convention of the California State Bee-keepers' Association will be held in the Chamber of Commerce, at Los Angeles, on Feb. 21 and 22, 1900. Convention will be called to order at 1:30 p. m., on Feb. 21. At this time the railroads will sell round-trip tickets to everybody, for one and one-third fare, on account of the Industrial, Mining, and Citrus Exposition, which will be held in Los Angeles. Tickets good for ten days. Let every bee-keeper bring some hive, tool, or experience which he has found valuable, and we will have a good convention.

R. WILKIN, Pres.
J. F. M'INTYRE, Sec.

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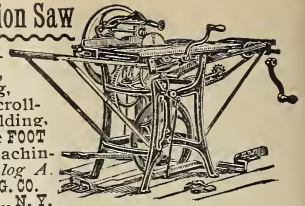
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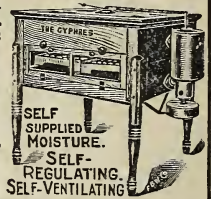


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